



**Status Update  
for the Near Miss Event at  
San Onofre Nuclear Generating Station (SONGS)**

Marlone Davis  
NMSS/DSFM/IOB  
October 9, 2018

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## Agenda

- Introduction
- Background
- Brief Overview of Event
- Status Update



10/9/2018

## Introduction

- The purpose of this presentation is to provide a brief overview and current updated status of the SONGS near missed event.
- Success for this presentation is to ensure that all interested parties have a general awareness of the event and some of the findings discovered during the special inspection conducted by the NRC.



10/9/2018

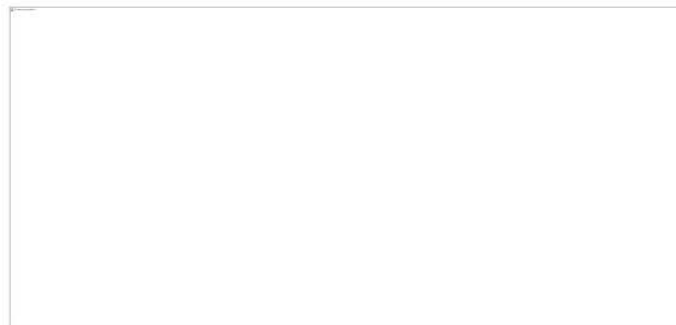
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## Background

- Holtec International (Holtec) latest NRC approved spent fuel storage cask system used at Callaway Plant and San Onofre Nuclear Generating Station (SONGS).
  - HI-STORM UMAX CoC No. 72-1040
  - UMAX - Underground MAXimum capacity storage system

Error message "Picture can't be displayed" appears. The presenter no longer has a copy of this presentation, and after working with the IT staff, we are not able to get the picture to display.



10/9/2018



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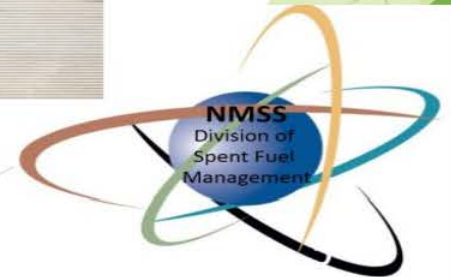


## Background

### Vertical Cask Transporter (VCT)



10/9/2018



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## Background

### VCT Operator



10/9/2018

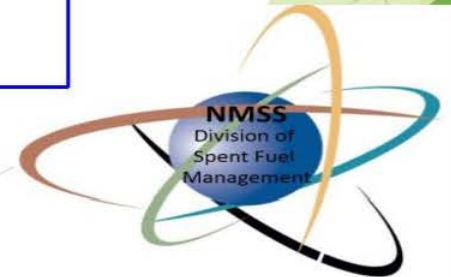


## Background

### Down Loading Operation

(b)(4)

10/9/2018



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## Background



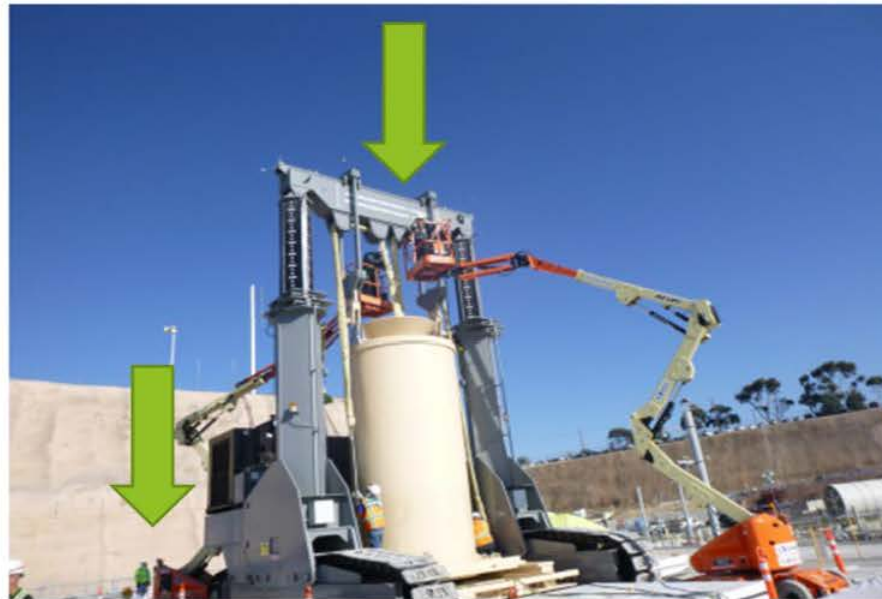
10/9/2018



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## Background



10/9/2018





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## Background



10/9/2018



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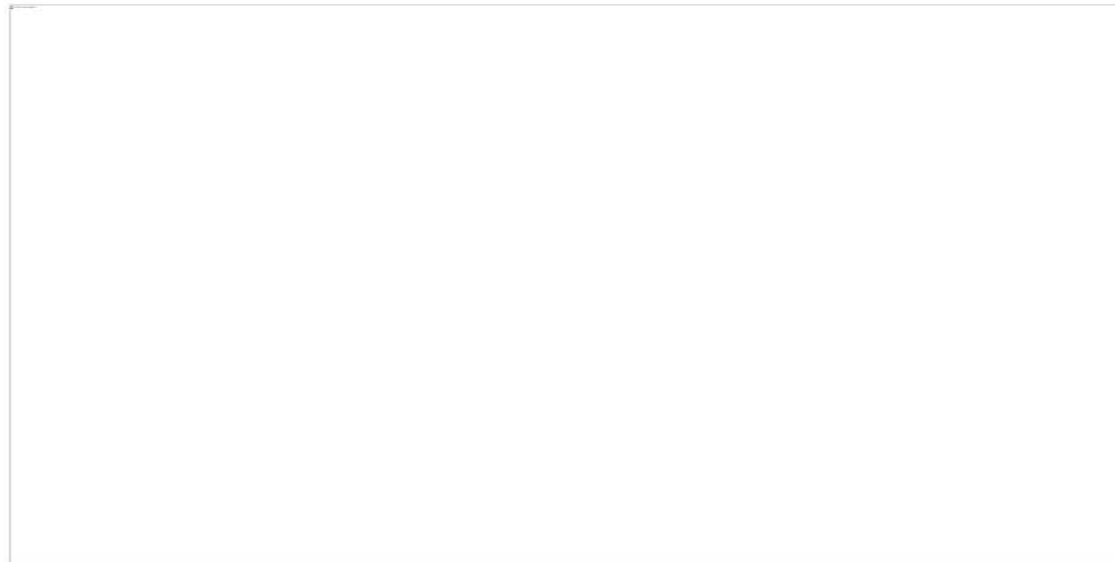


## Overview

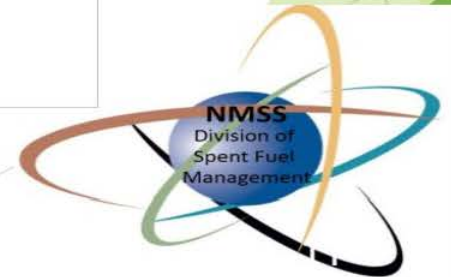
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### Near Missed Event at SONGS

Error message "Picture can't be displayed" appears. The presenter no longer has a copy of this presentation, and after working with the IT staff, we are not able to get the picture to display.



10/9/2018



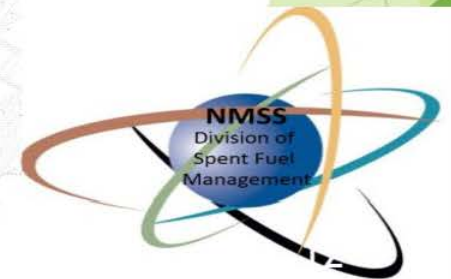
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## Overview



10/9/2018



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## Overview

VCT Operator  
“Load Indication”



10/9/2018



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## Overview

### Tower Height



10/9/2018





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## Overview

### Shield Ring Detail View



10/9/2018



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## Overview

### Shield Ring Detail View



10/9/2018

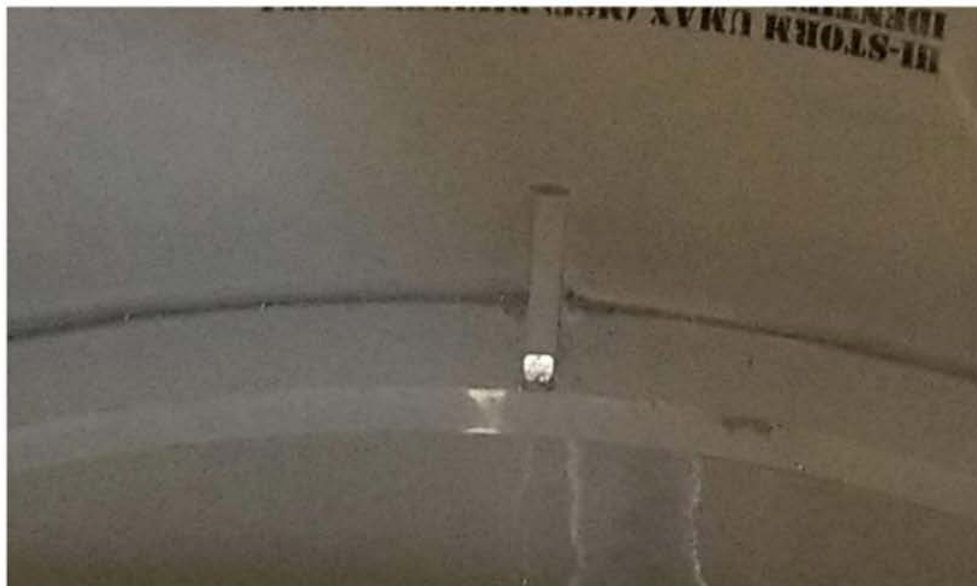


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## Overview

### Shield Ring Detail View



10/9/2018



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## Overview

### MPC Inserted



10/9/2018



## Status Update

- ▶ Inspection team debriefed with five (5) violations.
- ▶ Inspection team is still waiting on SONGS and Holtec to complete their Apparent and Root Cause Evaluations
- ▶ There is currently a hold on loading and transfer operations.
- ▶ SONGS and Holtec are performing practice runs/demos with revised procedures.
- ▶ NRC plan on going to observe SONGS final demonstrations prior to initiating loading and transfer operations again

10/9/2018





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10/9/2018

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**From:** (b)(7)(C)  
**Sent:** Thursday, August 30, 2018 10:19 AM  
**To:** (b)(7)(C)  
**Subject:** Fwd: (External):RE: (External):Cask Download Event Holtec Individuals

(b)(7)(C)

My apologies, it looks like I didn't forward. Please see below for Item 2.B.3.3.

Thank you,

(b)(7)(C)

Sent from my iPhone

Begin forwarded message:

**From:** (b)(7)(C)  
**Date:** August 29, 2018 at 2:53:13 PM PDT  
**To:** (b)(7)(C)  
**Cc:** (b)(7)(C)  
**Subject:** (External):RE: (External):Cask Download Event Holtec Individuals

(b)(7)(C)

Below is contact info for all of the involved individuals:

(b)(7)(C)

(b)(7)(C)

**Holtec International** | Site Services  
SONGS Fuel Transfer Operation  
Cell: (b)(7)(C)  
Office: 949.368.9089  
(b)(7)(C)

---

**From:** (b)(7)(C)  
**Sent:** Wednesday, August 29, 2018 10:26 AM  
**To:** (b)(7)(C)  
**Subject:** FW: (External):Cask Download Event Holtec Individuals

(b)(7)(C)

SONGS ISFSI Expansion Project  
T. 949-368-9059 | M. (b)(7)(C)  
5000 Pacific Coast Highway, San Clemente, CA 92674



---

**From:** (b)(7)(C)  
**Sent:** Tuesday, August 28, 2018 12:34 PM  
**To:** (b)(7)(C)  
**Cc:** (b)(7)(C)  
**Subject:** (External):Cask Download Event Holtec Individuals

(b)(7)(C)

Here are the individuals that were involved in the cask download event that will be available for the week of 9/10/18:

(b)(7)(C)


(b)(7)(C)

cell: (b)(7)(C)

mailto: (b)(7)(C)

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	Procedure Number: HSP-34	
	Use Category: Reference	
	Revision: 14	Page: 17 of 25

Title:  
TRAINING OF SUBCONTRACTED SITE  
SERVICES PERSONNEL

Exhibit 8.1: Standard Training Attendance Sheet

Topic: MPC TRANSFER FOR HI-STORM UMAX  
SYSTEM

Date: 08-28-18

Duration: 45 min

Performed by: \_\_\_\_\_

(b)(7)(C)

Sign Name

Print Name

(b)(7)(C)




		Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>		Use Category: <b>Reference</b>	
		Revision: <b>14</b>	Page: <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet

Topic: MPC TRANSFER FOR HI-STORM UMAX  
SYSTEM

Date: 08-28-18

Duration: \_\_\_\_\_

Performed by: \_\_\_\_\_

Sign Name	Print Name
-----------	------------

(b)(7)(C)


		Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>		Use Category: <b>Reference</b>	
		Revision: <b>14</b>	Page: <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet

Topic: MPC TRANSFER FOR HI-STORM UMAX  
SYSTEM NIGHT SHIFT.

Date: 08-28-18

Duration: 45 mins

Performed by: \_\_\_\_\_

(b)(7)(C)

Sign Name	Print Name
-----------	------------

(b)(7)(C)

<div style="height: 460px;"></div>
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		Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>		Use Category: <b>Reference</b>	
		Revision: <b>14</b>	Page: <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet


Topic: MPC TRANSFER FOR HI-STORM UMAX  
SYSTEM NIGHT SHIFT

Date: 08-28-18 Duration: 45 min

Performed by: (b)(7)(C)

Sign Name	Print Name
<div style="border: 1px solid black; padding: 5px;">(b)(7)(C)</div>	



 <b>HOLTEC</b> INTERNATIONAL	Procedure Number: <b>HSP-34</b>	
	Use Category: <b>Reference</b>	
	Revision: <b>14</b>	Page: <b>17 of 25</b>

Title: **TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL**

Exhibit 8.1: Standard Training Attendance Sheet

Topic: **LOAD HANDLING CONTROL FOR CRANE**  
**3 VCT OPERATIONS**

Date: **08-28-18** Duration: **45 min**

Performed by: (b)(7)(C)

Sign Name	Print Name
-----------	------------

(b)(7)(C)




	Procedure Number: HSP-34	
	Use Category: Reference	
	Revision: 14	Page: 17 of 25

Exhibit 8.1: Standard Training Attendance Sheet


Topic: LOAD HANDLING CONTROL FOR CRANE  
3 VCT OPERATIONS

Date: 08-28-18 Duration: 45 min'

Performed by: (b)(7)(C)

Sign Name	Print Name
<div style="border: 1px solid black; padding: 5px;">(b)(7)(C)</div>	

night shift

 HOLTEC INTERNATIONAL	Procedure Number HSP-34	
	Use Category Reference	
	Revision 14	Page 17 of 25

Title TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL
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Exhibit 8.1: Standard Training Attendance Sheet

Topic: LOAD HANDLING CONTROL FOR CRANE  
3 VCT OPERATIONS

Date: 08-28-18

Duration: 45 mins

Performed by:

(b)(7)(C)

Sign Name

Print Name

(b)(7)(C)


		Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>		Use Category: <b>Reference</b>	
		Revision: <b>14</b>	Page: <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet

Topic: LOAD HANDLING CONTROL FOR CRANE  
3 VCT OPERATIONS

Date: 08-28-18 Duration: 45 mins

Performed by: (b)(7)(C)

Sign Name	Print Name
(b)(7)(C)	

---

**From:** (b)(7)(C)  
**Sent:** Tuesday, August 28, 2018 10:55 AM  
**To:** (b)(7)(C)  
**Cc:**  
**Subject:** (External):Divider shell photos

VIDER SHEET



III-STORM UMAX (MSE) DIVID  
IDENTIFICATION NO. 0100  
WEIGHT: 15,550 LBS.

(b)(7)(C)  
cell: (b)(7)(C)  
mailto: (b)(7)(C)




	Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>	Use Category: <b>Reference</b>	
	Revision: <b>10</b>	Page: <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet


Topic: Human Performance

Date: 10/4/17

Duration: 1 hour

Performed by: \_\_\_\_\_

Sign Name	Print Name
(b)(7)(C)	

	Procedure Number: <b>HSP-34</b>	
	Use Category: <b>Reference</b>	
	Revision: <b>10</b>	Page: <b>17 of 25</b>

Title:  
**TRAINING OF SUBCONTRACTED SITE  
SERVICES PERSONNEL**

Exhibit 8.1: Standard Training Attendance Sheet

Topic: LP-HOL UM 4x-02  
Licensing

Date: 10/4/17 Duration: 3 hours

Performed by: (b)(7)(C)

Sign Name	Print Name
<div style="border: 1px solid black; padding: 5px;">(b)(7)(C)</div>	





Procedure Number:

HSP-34

Title:

TRAINING OF SUBCONTRACTED SITE  
SERVICES PERSONNEL

Use Category:

Reference

Revision:

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Exhibit 8.1: Standard Training Attendance SheetTopic: Nuclear Safety culture / SCWEDate: 10/9/17Duration: 1 hour

Performed by: \_\_\_\_\_

Sign Name

Print Name

(b)(7)(C)

	Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>	Use Category: <b>Reference</b>	
	Revision: <b>10</b>	Page: <b>17 of 25</b>


**Exhibit 8.1: Standard Training Attendance Sheet**

Topic: LP-HOL-UMAX-001  
Cask Overview - UMAX

Date: 10/4/17                      Duration: 3 hours

Performed by: (b)(7)(C) \_\_\_\_\_

Sign Name	Print Name
<div style="border: 1px solid blue; height: 500px; padding: 5px;">           (b)(7)(C)         </div>	

	Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>	Use Category: <b>Reference</b>	
	Revision: <b>10</b>	Page: <b>17 of 25</b>

**Exhibit 8.1: Standard Training Attendance Sheet**

Topic: LP-HSL-UmAr-03  
System Preparation and Loading - 401120

Date: 10/4/17

Duration: 2 hours

Performed by: (b)(7)(C)

Sign Name	Print Name
<div style="border: 2px solid blue; padding: 5px;">           (b)(7)(C)         </div>	

Name: (b)(7)(C)			
Task Qualification	Rev	Qualification Status	Expiration/Reason
SSCM06: FME Worker	3	QUALIFIED	LIFETIME
GETRWT: RADIATION WORKER QUALIFICATION	6	QUALIFIED	10/12/2018
GETPAT: Plant Access Training (Does not imply individual currently holds Protected Area Unescorted Access)	9	QUALIFIED	10/11/2018
*** VALID ONLY ON 10/17/2017 ***		eQIS Version 03.04.00: QA Program Affecting	

<b>Name:</b> (b)(7)(C)			
Task Qualification	Rev	Qualification Status	Expiration/Reason
SSCM06: FME Worker	3	QUALIFIED	LIFETIME
SSMM16: NUREG 0612 Program	1	QUALIFIED	4/18/2019
GETRWT: RADIATION WORKER QUALIFICATION	6	QUALIFIED	10/12/2018
GETPAT: Plant Access Training (Does not imply individual currently holds Protected Area Unescorted Access)	9	QUALIFIED	10/11/2018
*** VALID ONLY ON 10/19/2017 ***		eQIS Version 03.04.00: QA Program Affecting	



Name: (b)(7)(C)			
Task Qualification	Rev	Qualification Status	Expiration/Reason
SSCM06: FME Worker	3	QUALIFIED	LIFETIME
SSCM07: Fork Lift Operator	1	QUALIFIED	11/29/2020
SHIPRW: 49CFR HAZARDOUS MATERIAL EMPLOYEE TRAINING	3	QUALIFIED	10/23/2020
SSMM16: NUREG 0612 Program	1	QUALIFIED	4/18/2019
GETRWT: RADIATION WORKER QUALIFICATION	6	QUALIFIED	10/12/2018
GETPAT: Plant Access Training (Does not imply individual currently holds Protected Area Unescorted Access)	9	QUALIFIED	10/11/2018
SSMM13: Gantry/Overhead Crane Operator	1	QUALIFIED	5/10/2018
*** VALID ONLY ON 11/30/2017 ***		eQIS Version 03.04.00: QA Program Affecting	

Added to  
matrix  
11/30/17

(b)(7)(C)



Meeting Date: 2/2/18

(b)(7)(C)

**Location:**

**Signature**

(b)(4)

Title <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>	Use Category	Reference
	Revision 10	Page 17 of 25

Exhibit 8.1: Standard Training Attendance SheetTopic: STAND DOWNWORK STEPS NOT SIGNED OFF OR BY PASSED DURING ANSI INSPECTIONSDate: 04-20-18

Duration: \_\_\_\_\_

Performed by: (b)(7)(C)

Sign Name

Print Name

(b)(7)(C)



Holtec Technology Campus, 1 Holtec Boulevard, Camden, NJ 08104

Site Expectations Brief 11.8.17

# 43

Name	Signature	Title
(b)(7)(C)		



Procedure Number

HSP-34

Title

TRAINING OF SUBCONTRACTED SITE  
SERVICES PERSONNEL

Use Category

Reference

Revision

10

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## Exhibit 8.1: Standard Training Attendance Sheet

D

Topic: Site Services Daily Project Surveillance Program  
HSP-1004Date: 2/5/2018 <sup>03 2/5/18</sup>  
2018 Duration: 1hrPerformed by: (b)(7)(C)

Sign Name

Print Name

(b)(7)(C)

**ATTACHMENT 8.1: OBSERVATION PARTICIPANT ACKNOWLEDGMENT**

(b)(4), (b)(7)(C)



### 2464. ISFSI Expansion Project

### Attendance Record

Topic(s): Human Performance Training and Safety Metrics

Presenter(s): (b)(7)(C)

Date: January 18, 2018

Duration: 2 hrs

## ATTENDEES

[illegible]

Name:

(b)(7)(C)

Task Qualification	Rev	Qualification Status	Expiration/Reason
SSCM06: FME Worker	3	QUALIFIED	LIFETIME
SSCM07: Fork Lift Operator	1	QUALIFIED	11/29/2020
SHIPRW: 49CFR HAZARDOUS MATERIAL EMPLOYEE TRAINING	3	QUALIFIED	10/23/2020
SSMM16: NUREG 0612 Program	2	QUALIFIED	4/18/2019
SSMM13: Gantry/Overhead Crane Operator	1	QUALIFIED	4/10/2019
GETRWT: RADIATION WORKER QUALIFICATION	6	QUALIFIED	10/12/2018
GETPAT: Plant Access Training (Does not imply individual currently holds Protected Area Unescorted Access)	9	QUALIFIED	10/11/2018
*** VALID ONLY ON 04/26/2018 ***		eQIS Version 03.04.00: QA Program Affecting	

**Task Qualification: SSMM16: NUREG 0612 Program**

Name	Task Qualification	Rev	Qualification Status	Expiration/Reason
(b)(7)(C)	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/8/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/7/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	9/5/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	8/26/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	8/6/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	7/25/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	7/11/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	7/11/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	7/10/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	7/10/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	7/10/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	7/10/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	7/9/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	6/13/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	6/4/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	6/4/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	6/4/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	6/4/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	4/18/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	4/18/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	4/18/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	4/18/2019
	SSMM16: NUREG 0612 Program	2	QUALIFIED	4/10/2019
*** VALID ONLY ON 03/12/2018 ***				
eQIS Version 03.04.00: QA Program Affecting				



Johnson Laser Level Training

Training Date: 5/25/2018

Instructor;

(b)(7)(C)

Location: SONGS

Name	Title	Company	Signature
(b)(7)(C)			



Exhibit 8.5 Initial Pre – Job Brief Meeting

Work Plan No.: VVM #70 ISFSI down load Date: 6-10-2018  
Stand down

Briefing Conducted By: (b)(7)(C)

(b)(7)(C)

[Redacted content]







**Exhibit 2: Employee Acknowledgement Form**

**EMPLOYEE ACKNOWLEDGEMENT FORM**

**CODE OF SAFE PRACTICES**

I, (b)(7)(C) \_\_\_\_\_ (print), hereby acknowledge that I have received, read, and understand the "Code of Safe Practices" for Holtec employees including Contractors on our job site.

I agree to conform to all Company practices, rules, and regulations relating to safe work performance.

I understand that my failure to follow these safety procedures may result in disciplinary action up to and including discharge.

I further understand that:

- a. It is my responsibility to report all unsafe conditions or violations of the Code of Safe Practices to my Supervisor or other management personnel in order to minimize the potential of injury to my fellow workers.
- b. I am encouraged to inform my immediate supervisor of any hazards at the worksite without fear of reprisal, and that should my assistance create any such action or related intimidation, that I am encouraged to contact his/her supervisor or Safety Representative.

(b)(7)(C) \_\_\_\_\_


(Signature of Employee)

06/20/2018  
Date

(b)(7)(C) \_\_\_\_\_

(Signature of Supervisor)

06-21-18  
Date

 <b>HOLTEC</b> INTERNATIONAL	Procedure Number: <b>HSP-34</b>	
	Use Category: <b>Reference</b>	
	Revision: <b>14</b>	Page: <b>19 of 25</b>

Title:  
**TRAINING OF SUBCONTRACTED SITE  
SERVICES PERSONNEL**

**EXHIBIT 8.3: READ AND SIGN SHEET**

Document Title: See Attached

Holtec Procedure No.: HSP-34 Revision: 14


Date: 06/20/2018

My signature below acknowledges that I have completed the reading of the document above and fully understand its content and how it applies to the work that I will be completing for Holtec.

(b)(7)(C)  
 Name

(b)(7)(C)  
 Signature

Document Title	Holtec Procedure No.	Initials
Code of Safe Practices	HPP-2464-1050 (Exhibit 7.1)	(b)(7)(C)
Action Item Tracking & Resolution Training	Reference HPP-2464-1057	
Hand and Power Tool Read and Sign	NA	
Hearing Protection Guidelines	NA	
Heat Illness Training (Read and Sign for Supervisors)	Reference HPP-2464-620	
Job Safety Analysis	HPP-2464-607 Rev. 1	
Lead Safety Training	Reference HPP-2464-1056	
Risk Management	Reference HPP-2464-1042	

	Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>	Use Category: <b>Reference</b>	
	Revision: <b>14</b>	Page: <b>19 of 25</b>

**EXHIBIT 8.3: READ AND SIGN SHEET**

Document Title: SEE ATTACHED

Holtec Procedure No.: SEE ATTACHED      Revision: SEE ATTACHED

Date: 07/27/2018

My signature below acknowledges that I have completed the reading of the document above and fully understand its content and how it applies to the work that I will be completing for Holtec.

(b)(7)(C)

Name

(b)(7)(C)

Signature

# Holtec Safety Gap Training

## Read and Sign Index

Document Title	Document Number	Revision	Initials
Ladder and Stair Safety	HPP-2464-1038	1	(b)(7)(C)
Medical Emergencies & First Aide	HPP-2464-1046	2	
Personal Protective Equipment	HPP-2464-608	1	
Scaffold User Training	HPP-2464-1146	2	
Compressed Gas	HPP-2464-1049	?	
Electrical Safety	HPP-2464-612	1	
Fire Protection	HPP-2464-1039	2	
Fitness for Duty	HPP-2464-1051	1	
Hearing Protection	HPP-2464-614	1	
Heat Illness Prevention	HPP-2464-620	1	
Hazard Communication Read & Sign	NA	NA	



Title:

TRAINING OF SUBCONTRACTED SITE  
SERVICES PERSONNEL

Procedure Number:

HSP-34

Use Category:

Reference

Revision:

14

Page:

17 of 25

Exhibit 8.1: Standard Training Attendance Sheet

Topic:

Stand Down

Date:

8-10-18

Duration:

2 hours

Performed by:


(b)(7)(C)

Sign Name

Print Name

(b)(7)(C)



	Procedure Number <b>HSP-34</b>	
Title <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>	Use Category <b>Reference</b>	
	Revision <b>10</b>	Page <b>17 of 25</b>

**Exhibit 8.1: Standard Training Attendance Sheet**

Topic: UCT415-260 JR ENG.

Date: 10/5/2017 Duration: 1.5 Hours

Performed by: (b)(7)(C)

Sign Name	Print Name
<div style="border: 2px solid blue; padding: 5px; min-height: 350px;">           (b)(7)(C)         </div>	

# DRY CASK STORAGE TRAINING ATTENDANCE SHEET

TRAINING MODULE: Licensing

APPLICABLE LESSON PLAN: LP-HOL-02

INSTRUCTOR: (b)(7)(C)

DATE OF CLASSROOM TRAINING: \_\_\_\_\_

NAME	LAST FOUR DIGITS OF SSN	SIGNATURE
<div style="border: 2px solid blue; padding: 10px; min-height: 200px;">(b)(7)(C)</div>		

# DRY CASK STORAGE TRAINING ATTENDANCE SHEET

**TRAINING MODULE:** Cask Overview

**APPLICABLE LESSON PLAN:** HOL-LP-01

**INSTRUCTOR:**

(b)(4), (b)(7)(C)

**DATE OF CLASSROOM TRAINING:** 1/22/2018

NAME	LAST FOUR DIGITS OF SS#	SIGNATURE
(b)(7)(C)		

# DRY CASK STORAGE TRAINING ATTENDANCE SHEET

TRAINING MODULE: System Preparation

APPLICABLE LESSON PLAN- LP-HOI-03

INSTRUCTOR: (b)(7)(C)

DATE OF CLASSROOM TRAINING: 1/23/2018

NAME	LAST FOUR DIGITS OF SS#	SIGNATURE
(b)(7)(C)		

# DRY CASK STORAGE TRAINING ATTENDANCE SHEET

TRAINING MODULE: Lessons Learned

APPLICABLE LESSON PLAN: LP-HOL-04

INSTRUCTOR: (b)(7)(C)

DATE OF CLASSROOM TRAINING: 1/23/2018

NAME	LAST FOUR DIGITS OF SSN	SIGNATURE
<div style="border: 1px solid black; height: 250px; width: 100%; position: relative;"><div style="position: absolute; top: 5px; left: 5px;">(b)(7)(C)</div></div>		





READ AND SIGN SHEET

Document Title: PROCESSING AND RESOLUTION OF CONCERNS

Holtec Procedure No.: HSP-101602 Revision: 0

Date: 02-28-2018

My signature below acknowledges that I have completed the reading of the document above and fully understand its content and how it applies to the work that I will be completing for Holtec.

(b)(7)(C)

Name

(b)(7)(C)

Signature





READ AND SIGN SHEET

CG 2-28-18

Document Title: HSP-101501 REPORTING OF DEFECTS PER 10CFR OR 10CFR 50.556

Holtec Procedure No.: HSP-101501 Revision: 0

Date: 02-28-2018


My signature below acknowledges that I have completed the reading of the document above and fully understand its content and how it applies to the work that I will be completing for Holtec.

(b)(7)(C)

Name

(b)(7)(C)

Signature

 <b>HOLTEC</b> INTERNATIONAL	Procedure Number: <b>HSP-34</b>	
	Use Category: <b>Reference</b>	
	Revision: <b>11</b>	Page: <b>17 of 25</b>

Title: **TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL**

Exhibit 8.1: Standard Training Attendance Sheet

Topic: LP-HOL-7 (Dry Cask Storage  
Supervisor Training)

Date: 2/22/18

Duration: 3 hours

Performed by:

Sign Name	Print Name
(b)(7)(C)	




		Procedure Number <b>HSP-34</b>	
Title <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>		Use Category <b>Reference</b>	
		Revision <b>10</b>	Page <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet

Topic: Case Overview - UMAX  
LP-HOL-UMAX-001

Date: 5/18/18 Duration: 4 hrs

Performed by: (b)(7)(C)

Sign Name

Print Name

(b)(7)(C)



TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL	Procedure Number HSP-34	
	Use Category Reference	
	Revision 10	Page 17 of 25

Exhibit 8.1: Standard Training Attendance Sheet

Topic: Lessons learned  
LP-H04-04

Date: 5/18/18 Duration: 2.0 hrs

Performed by: (b)(7)(C)

(b)(7)(C)	Sign Name	Print Name


		Procedure Number HSP-34	
Title TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL		Use Category Reference	
		Revision 10	Page 17 of 25

Exhibit 8.1: Standard Training Attendance Sheet

Topic: Lesson Learned  
LP-H06-04

Date: 5/18/18

Duration: 2.0 hrs

Performed by: (b)(7)(C)

Sign Name	Print Name
<div style="border: 2px solid blue; padding: 5px;">           (b)(7)(C)         </div>	







Title <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>	Procedure Number <b>HSP-34</b>	
	Use Category <b>Reference</b>	
	Revision <b>10</b>	Page <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet

Topic: System Preparation and Loading - UMAX  
LP-HOL-UMAX-003

Date: 5/18/18

Duration: 4 hrs

Performed by:

(b)(7)(C)

Sign Name

Print Name

(b)(7)(C)

HOLTEC HOLTEC		HSP-34	
Title TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL		Use Category Reference	
		Revision 10	Page 17 of 25

Exhibit 8.1: Standard Training Attendance Sheet

Topic: HOLTEC DCS OVERVIEW

Date: 04-16-18

Duration: 1 hr

Performed by: (b)(7)(C)

Sign Name	Print Name	
<div style="border: 1px solid blue; padding: 5px;">(b)(7)(C)</div>		



Title

TRAINING OF SUBCONTRACTED SITE  
SERVICES PERSONNEL

Use Category

Reference

Revision

10

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Exhibit 8.1: Standard Training Attendance SheetTopic: HOTEL DCS LICENSING PAGE 721  
TRAININGDate: 04-16-18Duration: 1 hr

Performed by:

(b)(7)(C)

Sign Name

Print Name

(b)(7)(C)


	Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>	Use Category: <b>Reference</b>	
	Revision: <b>14</b>	Page: <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet

Topic: LOAD HANDLING CONTROL FOR CRANE  
3 VCT OPERATIONS

Date: 08-28-18 Duration: 45 min

Performed by: (b)(7)(C)

Sign Name	Print Name
<div style="border: 2px solid blue; height: 450px; width: 100%; position: relative;"> <span style="position: absolute; top: 5px; left: 5px;">(b)(7)(C)</span> </div>	


		Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>		Use Category: <b>Reference</b>	
		Revision: <b>14</b>	Page: <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet


Topic: LOAD HANDLING CONTROL FOR CRANE  
3 VCT OPERATIONS

Date: 08-28-18 Duration: 45 min'

Performed by: (b)(7)(C)

Sign Name	Print Name
<div style="border: 2px solid blue; padding: 5px;">           (b)(7)(C)         </div>	

night shift

 HOLTEC INTERNATIONAL	Procedure Number HSP-34	
	Use Category Reference	
	Revision 14	Page 17 of 25

Title  
TRAINING OF SUBCONTRACTED SITE  
SERVICES PERSONNEL

Exhibit 8.1: Standard Training Attendance Sheet

Topic: LOAD HANDLING CONTROL FOR CRANE  
3 VCT OPERATIONS

Date: 08-28-18

Duration: 45 mins

Performed by:

(b)(7)(C)

Sign Name

Print Name

(b)(7)(C)




		Procedure Number: <b>HSP-34</b>	
Title: <b>TRAINING OF SUBCONTRACTED SITE SERVICES PERSONNEL</b>		Use Category: <b>Reference</b>	
		Revision: <b>14</b>	Page: <b>17 of 25</b>

Exhibit 8.1: Standard Training Attendance Sheet

Topic: LOAD HANDLING CONTROL FOR CRANE  
3 VCT OPERATIONS

Date: 08-28-18 Duration: 45 mins

Performed by: (b)(7)(C)

Sign Name	Print Name
<div style="border: 2px solid blue; width: 100%; height: 100%;"></div>	

**Tie**

Use Category	Percentage
General Purpose	60%
Specialized Applications	35%
Research & Development	5%

## Reference

Reason

10

Page

17 of 25

### Exhibit 8.1: Standard Training Attendance Sheet

Topic: HOLTEC DCS SYSTEM PREP & LOADING  
TRAINING

Date: 04-16-18

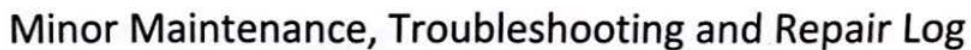
Duration: 1 hr

Performed by: (b)(7)(C)

Sign Name

Print Name

(b)(7)(C)



COMPONENT / ITEM: VCT 415-2	TYPE OF WORK: (Check all that apply) <input checked="" type="checkbox"/> Maintenance <input type="checkbox"/> Troubleshooting <input type="checkbox"/> Repair	DOCUMENTATION: <input checked="" type="checkbox"/> Skill of the Craft <input type="checkbox"/> Document Title / No. _____	DATE: START 10 / 10 / 17 COMPLETE 10 / 12 / 17
PROBLEM DESCRIPTION: Annual P.M. @ 332 Hrs. (b)(7)(C) 2/18/18			
WORK PERFORMED:		CASK LOADING SUPERVISOR (CLS) DIRECTING WORK: (b)(7)(C)	
(b)(4)			
MATERIALS USED: see 1,3+ above			
TESTING PERFORMED:		M&TE USED:	
COMPLETED STATUS: P.M. complete			









# Decommissioning **San Onofre**

Nuclear Generating Station

## Decommissioning Agent (DA) Training

MPC Pre-Operation Inspection

Presented By:  
**HOLTEC**



# Ground Rules

Return from breaks on time



Pagers and phones  
on silent mode



Practice good housekeeping



Phone calls, texting, and messages only on  
breaks, unless it is an emergency

Know your fire escape plan



**Sign Attendance Sheet**







Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Safety Break



# Objectives

- MPC Pre-Operation Inspection Procedure
  - Introduction
  - Limitations/Precautions
  - Procedure
    - Stage MPC lid and MPC Shell
    - Inspect MPC lid and closure ring
    - MPC lid and drain line fit-up
    - Inspect HI-TRAC
  - Oversight opportunities



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Introduction

- HPP-2464-100 (MPC-Pre-operation Procedure)

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b) (4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



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# Stage MPC Shell and Lid

(b)(4)





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# INSPECT the MPC

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Nuclear Generating Station

# INSPECT the MPC Lid and Closure Ring

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# MPC lid punch mark layout

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Vent port plug and cover plate fit-up

(b) (4)

# MPC INSPECTION & PREPARATION

Drain line inspection



TP-HOL-UMAX-003





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Drain Line Length Check

(b) (4)

(b) (4)

(b) (4)



Decommissioning  
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Nuclear Generating Station

# Damaged Fuel Container Installation

(b) (4)





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**San Onofre**  
Nuclear Generating Station

# MPC Lid Fit Test

(b) (4)



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**San Onofre**  
Nuclear Generating Station

# MPC Lid Fit Test

(b) (4)

## HI-TRAC VW Transfer Cask Materials

(b)(4)



Decommissioning  
San Onofre  
Nuclear Generating Station

# HI-TRAC Prep & Inspection

**Inspection of :**

**Why?**

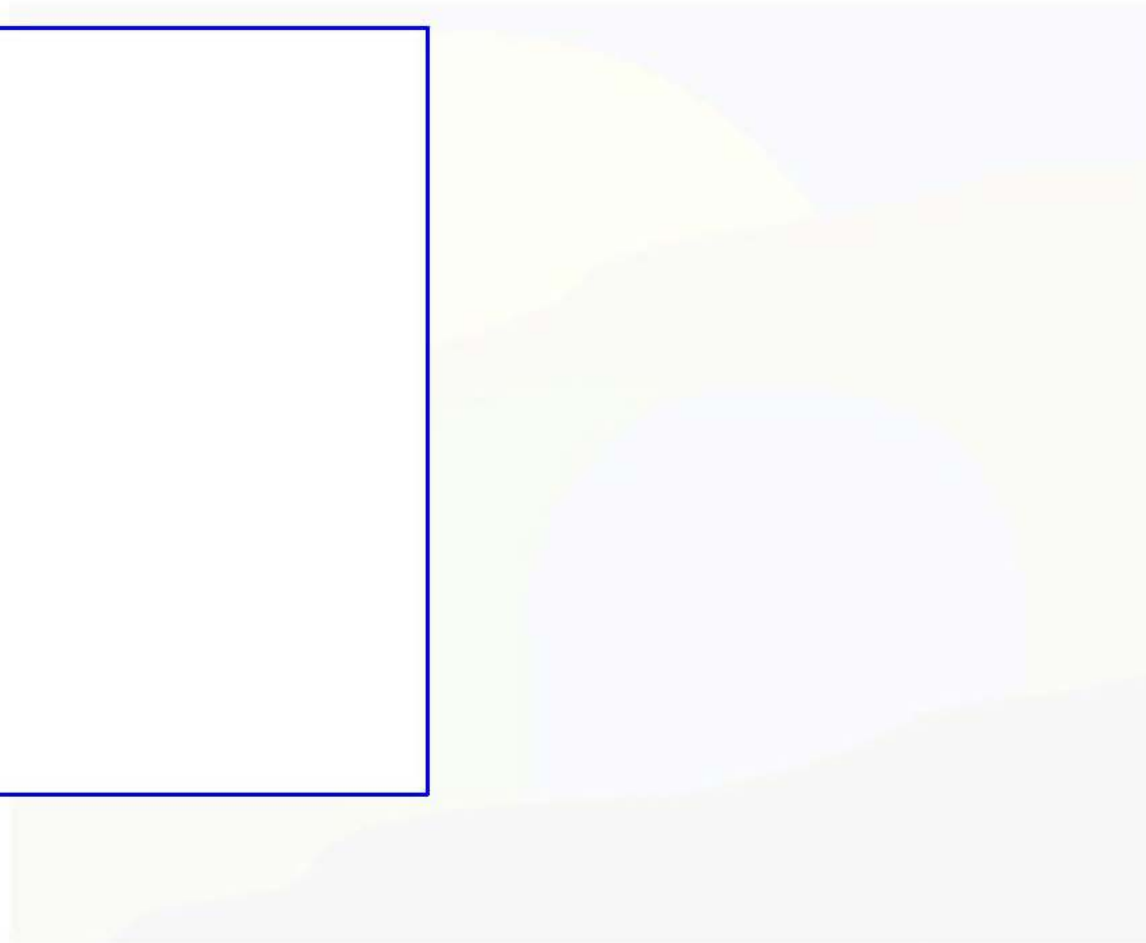
(b) (4)



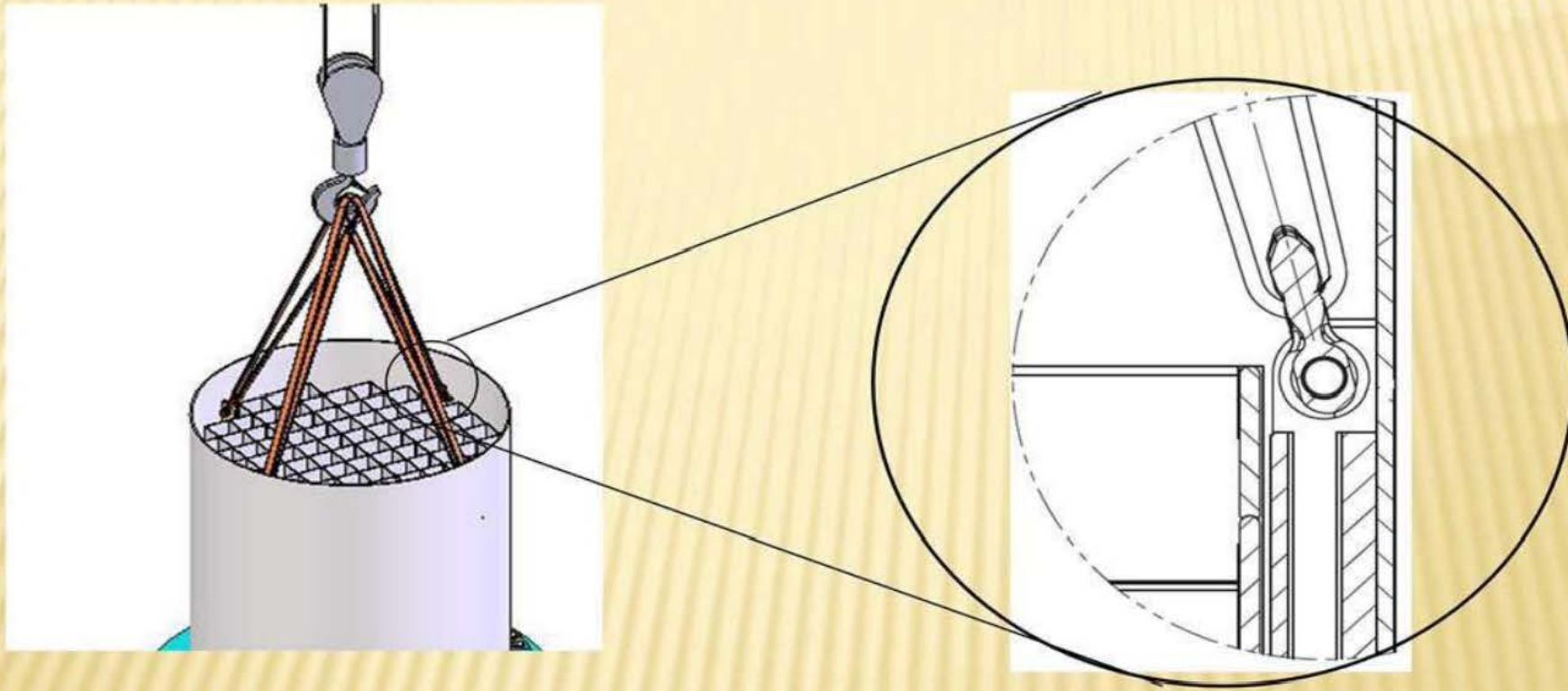
Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Inspect HI-TRAC Bottom Lid

(b)(4)



## Empty MPC Placement in HI-TRAC

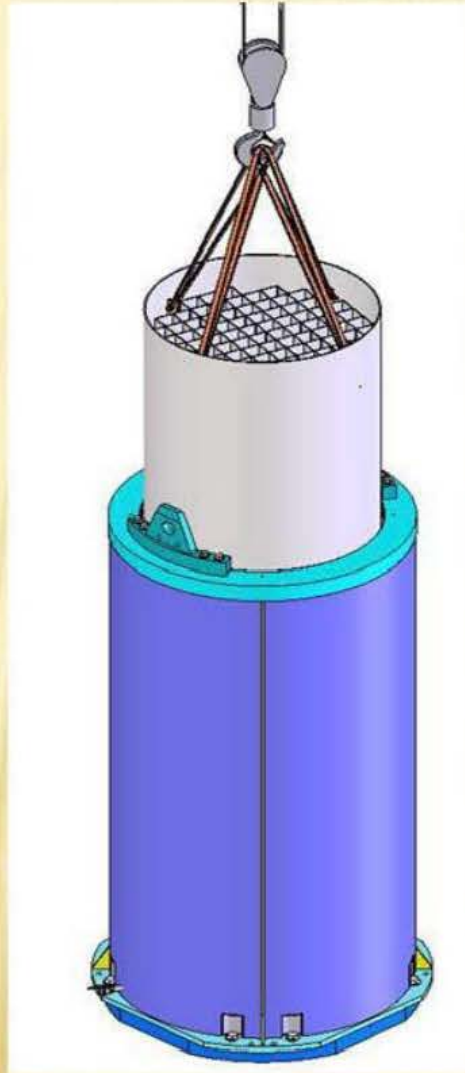




# EMPTY MPC PLACEMENT IN HI-TRAC

**What do we need  
to be wary of?**

TP-HOL-UMAX-003





**We Are In This Together  
Your Feedback Is Welcome**

Questions



# Decommissioning **San Onofre**

Nuclear Generating Station

## Decommissioning Agent (DA) Training

MPC Loading

Presented By:  
**HOLTEC**



# Ground Rules

Return from breaks on time



Pagers and phones  
on silent mode

Practice good housekeeping



Phone calls, texting, and messages only on  
breaks, unless it is an emergency

Know your fire escape plan



**Sign Attendance Sheet**





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Safety Break



# Objectives

- Introduction
- Limitations/Precautions
- Procedure
  - Drain HI-TRAC water jacket
  - Fill MPC with water
  - Install annulus seal
  - Move HI-TRAC/MPC from CWA to CLA
  - Install drain line and MPC lid
  - Remove MPC to CWA
  - Lower water level in HI-TRAC
- Oversight opportunities



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Introduction

- HPP-2464-200 (MPC Loading)

(b)(4)





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b) (4)





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b) (4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b) (4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

(b)(4)



# Things to Consider When Filling MPC with Water

(b)(4)





Decommissioning  
San Onofre  
Nuclear Generating Station

# LCO 3.3.1 Boron Concentration

## LCO 3.3.1

The concentration of boron in the water in the MPC shall meet the following limits for the applicable MPC model and the most limiting fuel assembly array/class to be stored in the MPC:

MPC-37: Minimum soluble boron concentration as required by the table below†.

Array/Class	All Undamaged Fuel Assemblies		One or more Damaged Fuel Assemblies or Fuel Debris	
	Maximum Initial Enrichment $\leq 4.0$ wt% $^{235}\text{U}$ (ppmb)	Maximum Initial Enrichment 5.0 wt% $^{235}\text{U}$ (ppmb)	Maximum Initial Enrichment $\leq 4.0$ wt% $^{235}\text{U}$ (ppmb)	Maximum Initial Enrichment 5.0 wt% $^{235}\text{U}$ (ppmb)
All 14x14 and 16x16	1000	1500††	1300	1800
All 15x15 and 17x17	1500	2000	1800	2300

† For maximum initial enrichments between 4.0 wt% and 5.0 wt%  $^{235}\text{U}$ , the minimum soluble boron concentration may be determined by linear interpolation between the minimum soluble boron concentrations at 4.0 wt% and 5.0 wt%.

†† If any undamaged fuel assemblies are stored in DFCs the minimum soluble boron concentration is 1600 ppmb.

**APPLICABILITY:** During PWR fuel LOADING OPERATIONS with fuel and water in the MPC

AND

During PWR fuel UNLOADING OPERATIONS with fuel and water in the MPC.



Decommissioning  
**San Onofre**  
Nuclear Generating Station

## LCO 3.3.1 Boron Concentration

- Boron concentration not within limit
  - Suspend LOADING OPERATIONS or UNLOADING OPERATIONS, immediately AND
  - Suspend positive reactivity additions, immediately AND
  - Initiate action to restore boron concentration to within limit, immediately



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# LCO 3.3.1 Boron Concentration

- SR 3.3.1.1: Verify boron concentration is within the applicable limit using two independent measurements
  - Within 4 hours prior to the Applicability of this LCO AND
  - Every 48 hours thereafter
  - Applicable when MPC is submerged in water or if water is to be added to, or recirculated through the MPC





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

- The Annulus Overpressure System is used to provide further protection against MPC external contamination during in-pool operations.

(b)(4)

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Annulus Filling

(b)(4)



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Nuclear Generating Station

# Procedure

(b) (4)



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**San Onofre**  
Nuclear Generating Station

# Procedure

(b)(4)



# HI-TRAC PLACEMENT INTO CASK PIT



TP-HOL-UMAX-003

25



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**San Onofre**  
Nuclear Generating Station

# Procedure

(b) (4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

(b)(4)



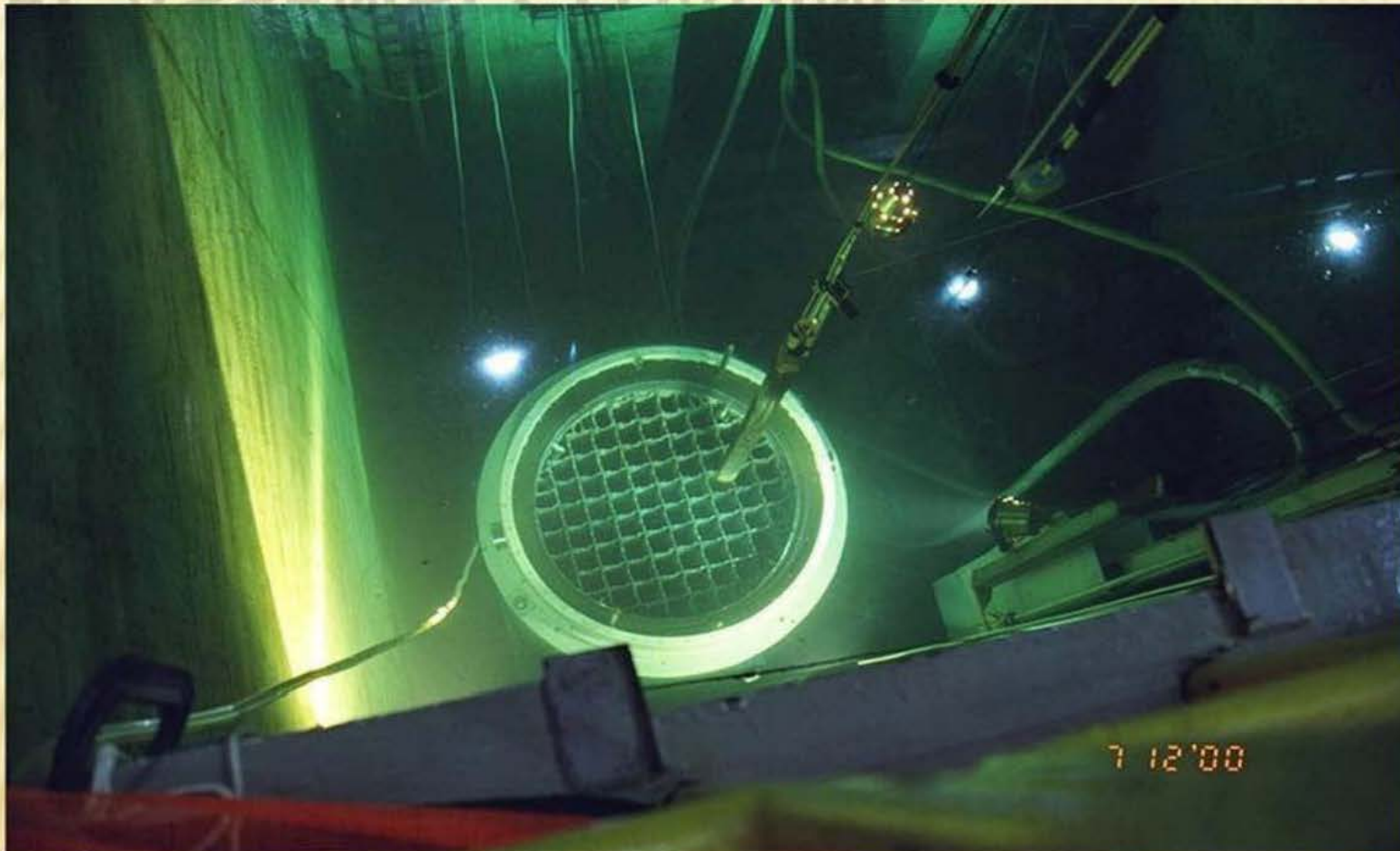
Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

(b)(4)



# FUEL ASSEMBLY LOADING



TP-HOL-UMAX-003

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Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

(b)(4)





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

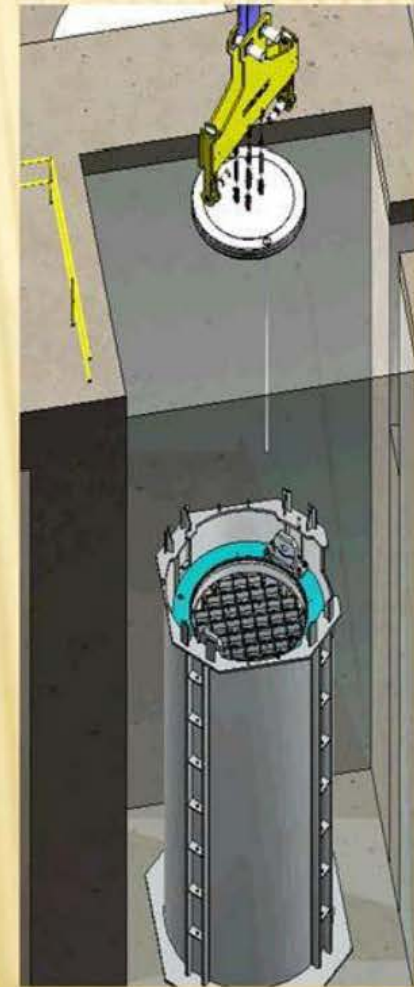
(b) (4)

# INSTALLATION OF THE MPC LID AFTER FUEL LOADING COMPLETE



Remember that the Time to Boil commences when lid is placed!

HI-TRAC shown in a VECASP



30



# INSTALLATION OF MPC LID AFTER FUEL LOADING IS COMPLETE

Bent drain tube at Hope Creek



TP-HOL-UMAX-003

32



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# MPC Time-To-Boil Contingency

(b)(4)



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**San Onofre**  
Nuclear Generating Station

# Procedure

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

(b) (4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

(b)(4)





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

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**We Are In This Together  
Your Feedback Is Welcome**

Questions



# Decommissioning **San Onofre**

Nuclear Generating Station

## Decommissioning Agent (DA) Training

MPC Transfer

Presented By:  
**HOLTEC**



# Ground Rules

Return from breaks on time



Pagers and phones  
on silent mode

Practice good housekeeping



Phone calls, texting, and messages only on  
breaks, unless it is an emergency

Know your fire escape plan



**Sign Attendance Sheet**





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Safety Break



# Objectives

- Introduction
- Limitations/Precautions
- Procedural steps
- Oversight opportunities





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Introduction

## HPP-2464-400 (MPC Transfer)

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

- The MPC transfer shall not occur if the meteorological forecast indicates a credible chance of adverse weather activity.
- **FSAR (HI-STORM UMAX CANISTER STORAGE SYSTEM) – General procedural requirement specified in FSAR. Minimize rain intrusion into UMAX VVM.**



# Precautions

- The HI-STORM UMAX lid shall be preferably kept less than 2 feet above the top surface of the VVM while over the MPC.
  - This lift limit action is purely a defense in-depth measure because the Closure Lid cannot fall and impact the MPC because of geometric constraints



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b) (4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b) (4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

- For short term transport operations, the minimum and maximum ambient temperatures are 0°F and 90°F respectively.
  - UMAX FSAR Table 2.3.6 – Environmental Parameters used in thermal basis for HI-TRAC VW Transfer Cask.



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)





Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

- Per UMAX FSAR, the minimum permissible temperature limit during closure lid handling operations of 10°F must not be violated by checking forecasted temperature.
- **UMAX FSAR (ANSI/ANS 57.9) – Table 2.3.1  
Normal design event condition parameter**



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Precautions

(b)(4)



Decommissioning  
**San Onofre**  
Nuclear Generating Station

# Procedure

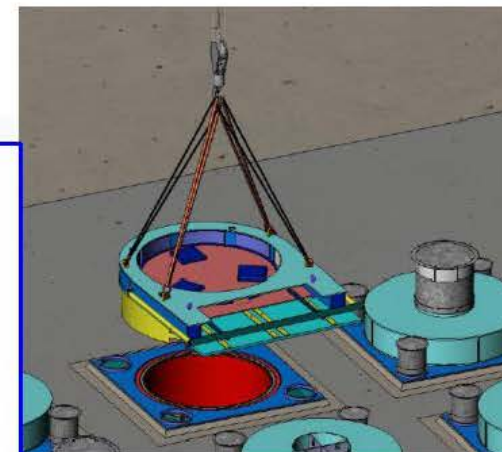
- Prepare HI-TRAC for Transfer:
  - Verify COC surveillance and TS requirements met
    - CoC SR 3.2.1.1, HI-TRAC VW Contamination Survey, prior to entering applicability of CoC TS LCO 3.2.1.
    - CoC TS 5.3, HI-TRAC VW Surface Dose Rates
  - Previously verified:
    - CoC SR 3.1.1.1 (MPC cavity drying with FHD)
    - CoC SR 3.1.1.2 (Helium backfill pressure)
    - CoC SR 3.1.1.3 (Helium leak rate of vent and drain port cover plates)



Decommissioning  
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# Procedure

(b)(4)







Decommissioning  
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# Procedure

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Decommissioning  
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# Procedure

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# Procedure

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- VCT Stability analysis (HI-2156626) requires a minimum distance of 47" including a safety factor of 2 to ensure VCT will not slide of ISFSI ramp



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# Procedure

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Decommissioning  
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# Procedure

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Decommissioning  
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# Operating Experience

(b)(4)



Decommissioning  
**San Onofre**  
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# Operating Experience

(b)(4)





Decommissioning  
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# Operating Experience

(b)(4)



## FINAL MOVEMENTS



Ensure that HHP is clear of vehicles and combustibles.

Ensure that VCT has enough diesel fuel.

Ensure that head sets are available for VCT operator and spotters.

Ensure security is prepared.

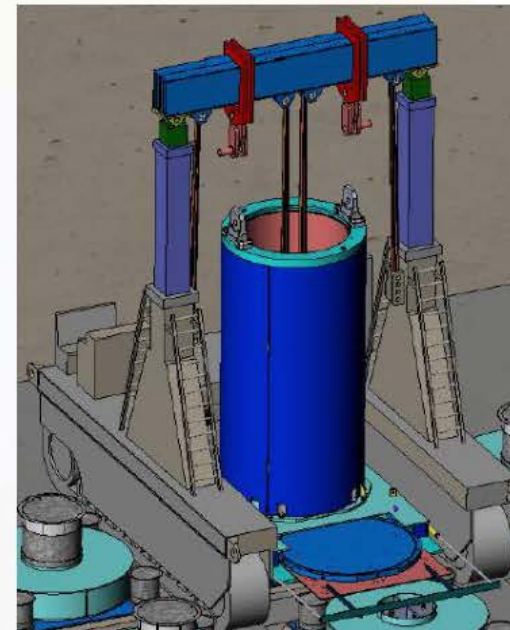
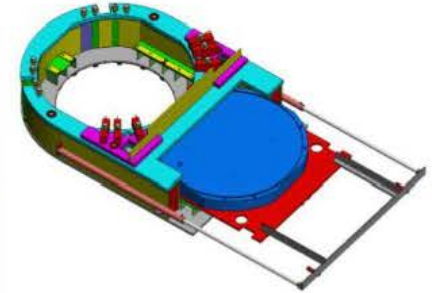
Ensure RP has the area posted.



Decommissioning  
San Onofre

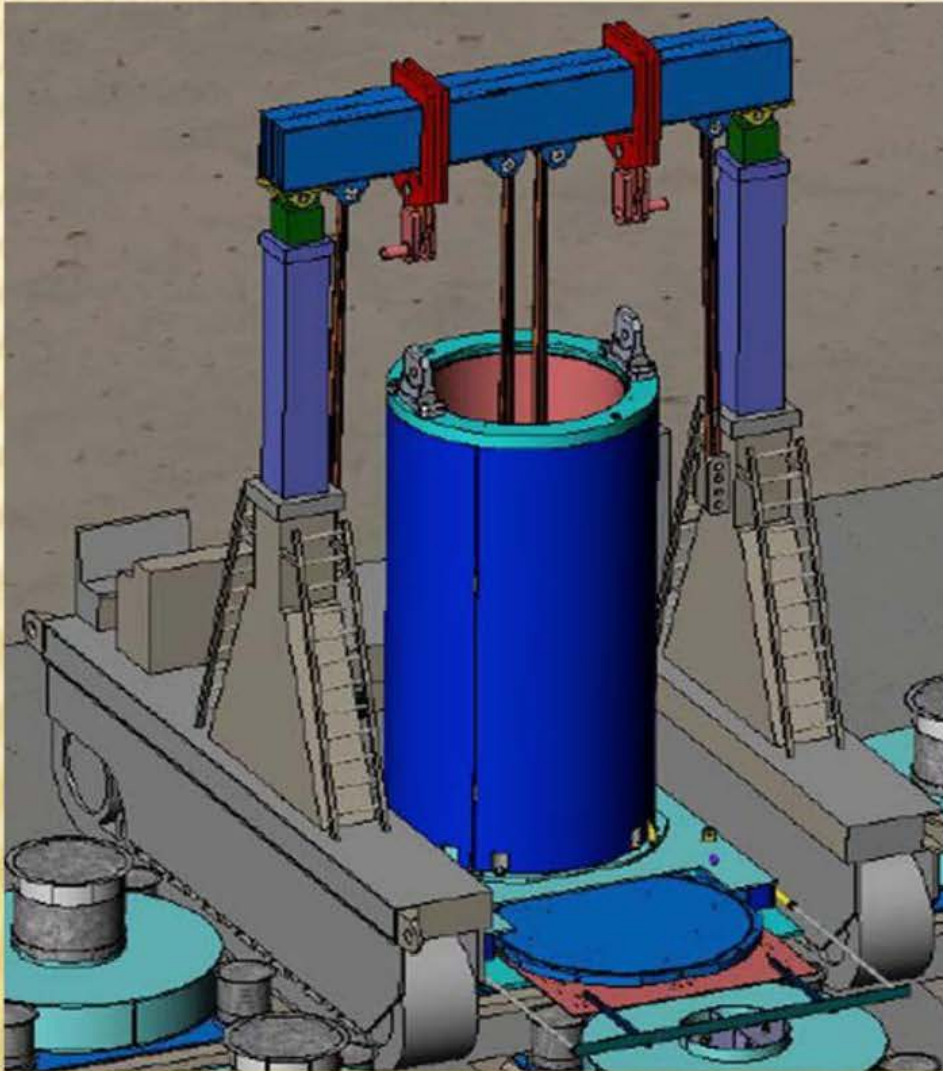
# Procedure

(b) (4)





# MPC TRANSFER



After transfer, things to watch out for are...

- Clean and contaminated sections of the HI-TRAC pool lid
- Don't cross contaminate
- Locked high rad is now created as there are high doses in CEC annulus
- MPC at a high temperature as well as lift cleats



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# Procedure

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# Procedure

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# Procedure

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## LCO 3.1.2

- The Spent Fuel Storage Cask (SFSC) heat removal system shall be operable (when 50% or more of the inlet vent duct areas are unblocked and available for flow or when air temp. requirements are met).
- Heat removal system operable, but partially (< 50%) blocked.
  - Restore SFSC heat removal system to operable status by removing blockage (no completion time limit)
- SFSC Heat removal system inoperable.
  - Restore SFSC heat removal system to operable status within 8 hours.



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## LCO 3.1.2

The Spent Fuel Storage Cask (SFSC) heat removal system shall be operable.

- Required Actions B.1 and associated Completion Times not met.
  - Measure SFSC dose rates in accordance with RP Program **immediately and once per 12 hrs thereafter AND**
  - Restore SFSC heat removal system to operable status within **24 hours OR**
  - Transfer the MPC into a Transfer Cask (HI-TRAC) within **24 hours.**





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# Surveillance Requirement

- SR 3.1.2
  - Verify that all VVM inlet and outlet duct screens are free of blockage from solid debris or floodwater **every 24 hours OR**
  - For VVMs with installed temperature monitoring equipment, verify that the difference between the average VVM air outlet duct temperature and ISFSI ambient temperature is  $\leq 80^{\circ}\text{F}$  for VVMS containing MPC37s.



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# LCO 3.2.1

- Removable contamination on the exterior surfaces of the TRANSFER CASK and accessible portions of the MPC shall each not exceed:
  - a. 1000 dpm/100 cm<sup>2</sup> from beta and gamma sources
  - b. 20 dpm/100 cm<sup>2</sup> from alpha sources
- TRANSFER CASK or MPC removable surface contamination limits not met.
  - Restore removable surface contamination to within limits within 7 days.
- Surveillance Requirements:
  - Verify that the removable contamination on the exterior surfaces of the TRANSFER CASK and accessible portions of the MPC containing fuel is within limits, **once prior to TRANSPORT OPERATIONS**

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Questions





# Decommissioning **San Onofre**

Nuclear Generating Station

## Decommissioning Agent (DA) Training

MPC Sealing

Presented By:  
**HOLTEC**



# Ground Rules

Return from breaks on time



Pagers and phones  
on silent mode

Practice good housekeeping



Phone calls, texting, and messages only on  
breaks, unless it is an emergency

Know your fire escape plan



**Sign Attendance Sheet**





Decommissioning  
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# Safety Break



# Objectives

- Introduction
- Limitations/Precautions
- Procedure
  - Set-up Argon Purge
  - MPC lid to shell welding
  - RVOA Installation
  - Hydrostatic Test with FHD
  - FHD set-up
  - Phase 1 and Phase 2 FHD operations
  - FHD system shutdown
  - Remove RVOA's
  - Torque Drain/Vent Port plugs
  - MPC port cover plate welding and NDE inspections
  - Helium leak test of cover plate welds
- Oversight opportunities



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# Introduction

- HPP-2464-300 (MPC Sealing)

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# Precautions

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# Precautions

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# Precautions

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# Precautions

- FHD Main Skid will reject a maximum of 230,000 BTU/hr of heat to the surrounding air through the air-cooled condenser.
- FHD Chiller Skid will reject approximately 100,000 BTU/hr for a period of approximately 2 hours maximum.
- FHD ancillary equipment requires manual ventilation in the area to be sufficient to support this heat load.



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# Precautions

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# Precautions

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# Precautions

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# Precaution

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# Precaution

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# Precaution

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# Precautions

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# Precautions

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# Precautions

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# Precautions

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# Procedure

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# Procedure

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# MPC Containment Boundary Examinations

## MPC Confinement Boundary Examinations

Weld Location	NDE Requirement
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# MPC Welding Operations

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# Procedure

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# RVOAS

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# Procedure

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# Hydrostatic Test

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# Procedure



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# Oversight Opportunities

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# HI-TRAC/MPC Preparation for SEALING

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# Procedure

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# FHD Safe Operation

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# What is an FHD?

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# The Science of FHD

- An FHD is a Forced Helium Dehydrator.
  - The FHD is a skid-mounted closed loop dehydration system used to remove residual water from the MPC.

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# The Science of FHD

- All of the water that can be practically removed from the MPC is blown out thru the drain line.
  - FHD accomplishes this using helium gas (99.995% grade He) for all operations
  - Residual water remains on the MPC bottom as well as a remaining adherent amount on all wetted surfaces (fuel, MPC shell, MPC basket)
- The FHD removes further water from the MPC by a process of evaporation, boiling, and demoisturizing of the circulating gas stream.





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# The Science of FHD

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# The Science of FHD

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# The Science of FHD

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# Dew Point Sensor

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# The Science of FHD

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# FHD Panel







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# Helium Circulator Module

- Helium Circulator Module

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# Pre-heater Module

- Pre-heater Module
  - Electrical process heater
  - Adds supplemental heat energy to helium gas
  - Works with existing heat of stored fuel in the MPC to overcome the heat lost through the sides of the HI-TRAC and top of the MPC
  - Heats the helium prior to entering the MPC to ensure the helium gas is heated and dry prior to re-entry into MPC cavity



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# Condensing Unit

- Condensing Unit
  - Uses an air-cooled condenser
  - Serves to cool the helium/vapor mixture exiting the MPC to well below the dew point based on system operating pressure
    - Facilitates the extraction of water from the helium stream via condensation



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# Demoisturizer Module

- Demoisturizer Module

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# FHD System Operating Conditions

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# Key Safety Interlocks for FHD

- The following interlocks provide an additional level of safety for FHD operations:

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# Key Safety Interlocks for FHD

- These additional interlocks provide also add to the level of safety for FHD operations:

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# Procedure

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# Procedure

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# LCO 3.1.1

- Table 3-1 provides decay heat and burnup limits for forced helium dehydration (FHD)
- MPC de-moisturizer exit gas temperature limit not met.
  - Must perform an engineering evaluation to determine quantity of moisture left in MPC. **Evaluation must be complete within 7 days AND**
  - Develop and initiate corrective actions necessary to return the MPC to compliance with Table 3-1. **Corrective actions completed within 30 days.**



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# LCO 3.1.1

- MPC helium backfill limit not met
  - Perform an engineering evaluation to determine the impact of helium differential.  
**Evaluation must be completed within 72 hours**

**AND**

- Develop and initiate corrective actions necessary to return to MPC to an analyzed condition by adding helium to or removing helium from the MPC.  
**Evaluation must be complete with 14 days.**

**OR**

- Develop and initiate corrective actions necessary to demonstrate through analysis, using the models and methods from the HISTORM UMAX FSAR, that all limits for MPC components and contents will be met. **Evaluation must be complete within 14 days.**





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# LCO 3.1.1

- MPC helium leak rate limit for vent and drain port cover plate welds not met
  - Perform an engineering evaluation to determine the impact of increased helium leak rate on heat removal capability and offsite dose. **Evaluation must be completed within 24 hours.**

**AND**

- Develop and initiate corrective actions necessary to return the MPC to compliance with SR 3.1.1.3. **Corrective actions must be completed within 7 days.**





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# LCO 3.1.1

- Required Actions and associated Completion Times not met:
  - Remove all fuel assemblies from the SFSC.
  - **Corrective action must be completed within 30 days.**



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# Surveillance Requirement (SR)

- SR 3.1.1.1
  - Verify MPC cavity has been dried in accordance with the applicable limits in Table 3-1.
  - Must be completed once prior to TRANSPORT OPERATIONS.



# Surveillance Requirement (SR)

- SR 3.1.1.2
  - Verify MPC helium backfill quantity is within limits specified in Table 3-2 for the applicable MPC model.
  - Must be completed once prior to TRANSPORT OPERATIONS.



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# Surveillance Requirement (SR)

- SR 3.1.1.3
  - Verify that the total helium leak rate through the MPC vent & drain port confinement meets the leak tight criteria of ANSI N14.5 – 1997 which is  $\leq 1.0\text{E-}07$  atm-cc/sec (He).
- Must be completed once prior to TRANSPORT OPERATIONS



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# Procedure

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# Operating Experience

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# MPC port cover plate welding

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# Decommissioning **San Onofre**

Nuclear Generating Station

## Decommissioning Agent (DA) Training

Responding to Abnormal  
Conditions

Presented By:  
**HOLTEC**



# Ground Rules

Return from breaks on time



Pagers and phones  
on silent mode

Practice good housekeeping



Phone calls, texting, and messages only on  
breaks, unless it is an emergency

Know your fire escape plan



**Sign Attendance Sheet**





Decommissioning  
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# Safety Break





# Objectives

- Responding to Abnormal Conditions
  - Introduction
  - Responsibilities
  - Discuss instructions for the following events:
    - MPC Damage
    - Forced Helium Dehydrator (FHD) Malfunction or Failure
    - Building Crane Malfunction or Failure
    - Multi-Purpose Pump malfunction or failure
    - Miscellaneous Equipment Gauge Malfunction
    - Vertical Cask Transporter (VCT) Malfunction or Failure
    - HI-PORT malfunction or failure
    - Welding Equipment Malfunction or Failure
    - Remote Valve Operating Assembly (RVOA) Malfunction or Failure
    - Recovery from Port Plug Assembly Leakage Problem
    - Contingency Actions for Krypton Burst
    - Contingency Actions for Loss of Ventilation during FHD Operations
    - Lift Yoke Air Supply Malfunction



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# Introduction

## HPP-2464-600 (Responding to Anomalies)

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# Responsibilities

- Holtec Project Manager:

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# General Response Actions

- General actions for each anomaly include:

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# MPC Damage

- MPC Damage

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# FHD Malfunction or Failure

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# FHD Malfunction or Failure

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# Building Crane Malfunction

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# Miscellaneous

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# VCT Malfunction or Failure

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# RVOA Malfunction

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# Port Plug Leakage

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# Krypton Burst

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# Loss of Ventilation during FHD Operations

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# Lift Yoke Air Supply Malfunction

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# Decommissioning **San Onofre** Nuclear Generating Station

## Decommissioning Agent (DA) Training

### GMDO Oversight Briefing

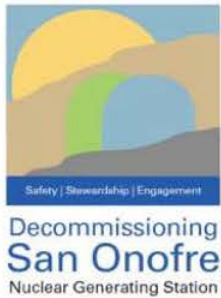
Presented By:

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# Objectives

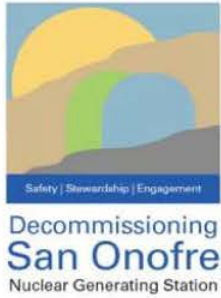
- Discuss why we are here and how did we get here
- Significance of Oversight Specialist training & qualification
  - A review of the process
- Understand Oversight Expectations
  - The Value of Oversight – What is High Value
- Oversight Role Behaviors “what good looks like”
  - In the field
  - Internal to DA Oversight
  - Writing and delivering of comments to HOLTEC
- Discuss what is working, and what is not working





# Cold and Dark Oversight

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# Oversight Specialist Qualification

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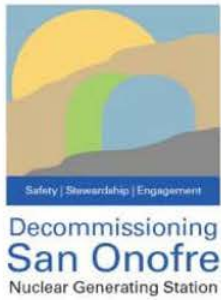


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## Defense in Depth to Safe Project Execution

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# High-Value Comments

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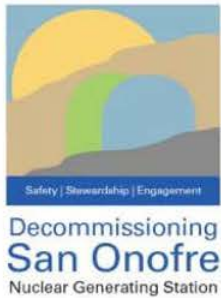
## Holtec Oversight Comment Value and Characteristic Analysis

~~For Internal Use Only~~

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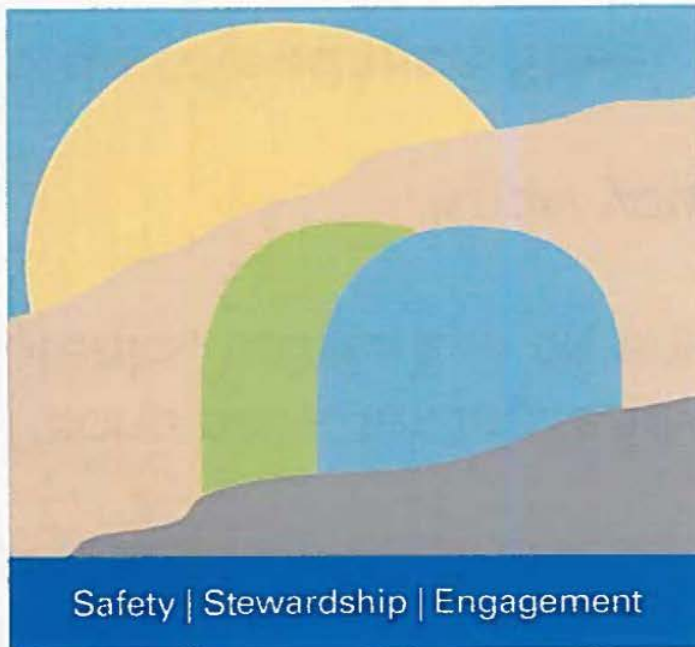
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# GMDO Comments & Expectations

- What do I need from our Team?
- How do we deliver value to our stakeholders?
- Why is this important to you?





# Decommissioning San Onofre

Nuclear Generating Station

## Decommissioning Agent (DA) Training

### Oversight Behaviors

Presented By:

(b)(7)(C)

# Ground Rules

Return from breaks on time



Pagers and phones  
on silent mode



Practice good housekeeping



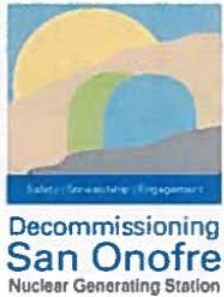
Phone calls, texting, and messages only on  
breaks, unless it is an emergency

Know your fire escape plan



**Sign Attendance Sheet**





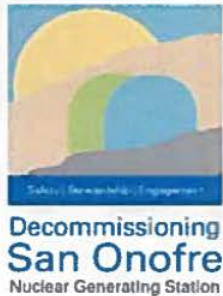
# Safety Break

- Who is CPR qualified/basic first aid qualified?
- Emergency Response Number is x86911
- Who will meet emergency response personnel?



# Objectives

- Establish an understanding of the Foundation of Oversight Behaviors & Oversight Role
- Understand Defense in Depth to Safe Project Execution
- Understand Key Oversight Expectations
- Oversight Role Behaviors “what good looks like”
  - In the field
  - Internal to DA Oversight
  - Writing and delivering of comments to HOLTEC
  - Responding to representatives from external Agencies



## Foundation of Oversight Behaviors

Foundational to Oversight Behaviors is the understanding of the importance of the role and the foundation of it's authority.

- Snyder v. SCE 1955
  - Contractor installed utility pole failed causing personal injury
  - SCE Inspector (Oversight) did not ensure pole installed to requirement. (6 ½ feet deep)
  - **Regardless of whether the work is performed by the utility or an independent contractor it hires.**



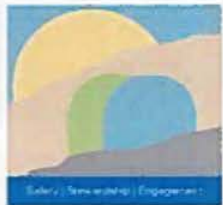
## Foundation of Oversight Behaviors

Other examples in California:

- Kern Power Plant
  - Worker fatally injured dismantling tank
  - Public injured during explosives demolition of major structure
- Huntington Beach Vault Explosion
  - Electrical subcontractor killed removing component
- CPUC-SED levied fines and other actions
- Civil lawsuits pending
- Snyder v. SCE case law cited here and across US





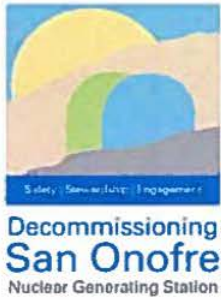


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## Defense in Depth to Safe Project Execution

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# Performing A Good Observation

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# Stay in the Green

## WHY IMPORTANT:

To focus attention on how to effectively interact with the Contractor and peers to ensure the following:

- Safety Adherence • Compliance with Requirements • Financial Stewardship

## When:

Apply guidelines whenever interacting with the Contractor or your peers.

## How:

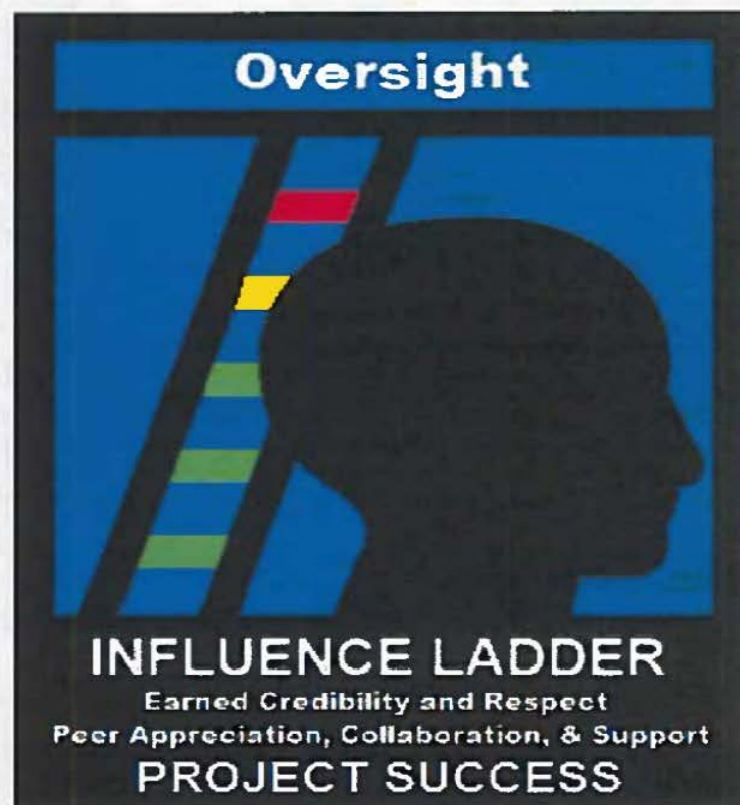
Apply hierarchal order and general rules of influence during interactions:

1. Referent	Power of Soft-Skills (5 E's): Ethical, Engaging, Empowering, Example Setting, Empathy
2. Expert	Subject matter expertise — thorough understanding of OE, best practice, rules, procedures, and processes
3. Reward	Convey your gratitude for support, and keep energy positive, value the opinion of others, <b>SMILE</b> .
4. Legitimate	Authority derived by your Oversight Role: Legal Precedent (Snyder VS SCE) & Contractual
5. Coercive	Last resort, influence by threatening or seeking negative consequences. Example: Threatening to Sue/Retain

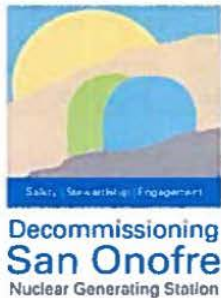
## Coaching Tips:

- Referent power is built up over time by your perceived sincerity when applying the 5 E's.
- Never stop mastering your area of responsibility or the oversight craft. **KNOWLEDGE IS POWER** and **CREDIBILITY**
- Simple Rewards: Attentive listening, acknowledge a person's concerns, letting a person save "face", or a Smile...
- Avoid the trap of "impatience" causing over reliance on your legitimate authority.
- Practice STAR before using coercive influence to achieve compliance or to change behavior.

# Influence Ladder







# DA Relationship with HOLTEC

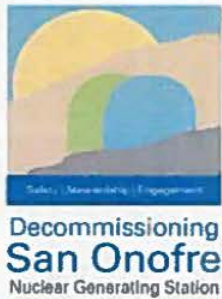
Earned Credibility and Respect

Isolated Environment

DA Organization

Part of the Contractor Team

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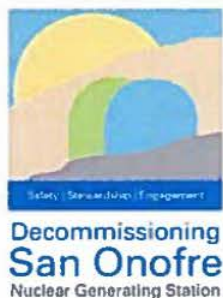


# Oversight Behaviors In the Field

Poor examples

Good examples

(b)(4)



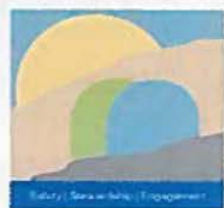
# Oversight Behaviors Internal to DA

## Poor examples

## Good examples

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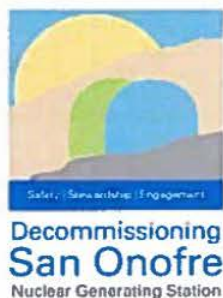
# Delivering Comments to HOLTEC

Poor examples

Good examples

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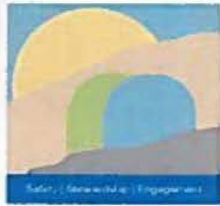
# Responses to External Agencies

Poor examples

Good examples

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# Document Review Standard

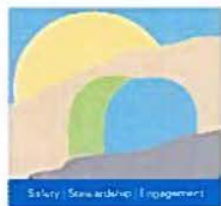
**Over-bearing**

**Standard**

**Leniency**

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# Written Comments - “Our Product”

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# Oversight Behaviors Summary

To be successful:

- Know Your Oversight Role and Authority
- Understand Defense in Depth
- Apply Oversight Priorities
- Proactively Identify Trends
- Know “What wrong looks like”
- Know “What good looks like”
- Exemplify Proper Oversight Behaviors
- Earn Credibility and Respect
- Follow the “Influence Ladder” Guidance



**This is not going to be easy!!!**





Safety | Stewardship | Engagement

# Decommissioning San Onofre

Nuclear Generating Station

## DESIGN CHANGE and RELATED PROCESSES

GENERIC FUNDAMENTALS AND  
TYPICAL SITE EXPECTATIONS

Presented By:

(b)(7)(C)

June, 2018

Decommissioning San Onofre Nuclear Generating Station Safety | Stewardship | Engagement







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## PURPOSE

- IMPROVE MUTUAL UNDERSTANDING OF PROCESS EXPECTATIONS
- CORRECT CONTRIBUTING CAUSES ASSOCIATED WITH SEISMIC RESTRAINT AND RELATED EXTENT OF CONDITION REVIEWS
- IMPROVE UNDERSTANDING OF RELATIONSHIP BETWEEN "DESIGN CHANGE" AND "REGULATORY REVIEW" PROCESSES

2

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## Learning Objectives

- Understanding fundamental regulatory requirements and guidance
  - QA Requirements for Design Control
  - QA requirements for Configuration Management
  - 10 CFR 50.59 and 72.48
    - NEI 96-07, R1 and NEI 12-04
- Understanding relationship and distinctions between processes

3

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# Corrective Actions Addressed

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# Related Processes

(b)(4)

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# Design Change Controls

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# Configuration Management

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# Regulatory Authorization

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# What is a Change?


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# Applicability Determination

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# Regulatory Authorization

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(b)(4)



# Regulatory Authorizations

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# Regulatory Authorizations


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# OE/LL from Various Reviews


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# OE/LL from Various Reviews

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# OE/LL from Various Reviews

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## SUMMARY

- Processes can be made to work sufficiently well to meet each set of expectations and constraints with clearer communications, reasonable feedback and receptiveness to necessary compromises.
- Inflexibility and unwillingness to cooperate will lead to unwarranted conflict

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# Decommissioning **San Onofre** Nuclear Generating Station

## Rigorous Process and Engineering Involvement Training

Oversight Behaviors

Presented By:

(b)(7)(C)

# Ground Rules

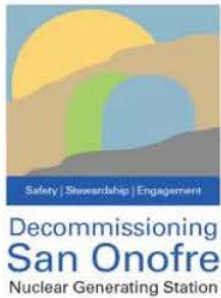
Pagers and phones on silent mode

Practice good housekeeping

Phone calls, texting, and messages only on breaks, unless it is an emergency

Know your fire escape plan

**Sign Attendance Sheet**



# Safety Break

- Who is CPR qualified/basic first aid qualified?
- Emergency Response Number is x86911
- Who will meet emergency response personnel?

# Decommissioning Principles

*“Safety is and always will be our top priority and now is a core value. Performing our jobs safely correctly and efficiently is fundamental to our success in decommissioning San Onofre.”*

(b)(7)(C)

(b)(4)

# Objectives

- Understand, as members of the DA organization, the regulations governing responsibility for implementation of the Quality Assurance Program
- Understand 10CFR50 Appendix B Criterion V (and 10CFR72 equivalent) for procedures establishes requirement for rigorous process.
- Describe Station/SCE organizational interfaces and how to get the right people involved
- Understand the Seismic Baseplate Event and what procedures should have prevented it.
- Oversight Role Behaviors “what good looks like”
  - In the field
  - Internal to DA Oversight
  - Writing and delivering of comments to HOLTEC
  - Responding to representatives from external Agencies
- Describe what behaviors need to be exhibited moving forward to prevent the same or similar events



# Quality Assurance Regulations

## 10CFR50 Appendix B

- As used in this appendix, "quality assurance" comprises all those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service.
- The applicant may delegate to others, such as contractors, agents, or consultants, the work of establishing and executing the quality assurance program, or any part thereof, but shall retain responsibility for the quality assurance program.



# Quality Assurance Regulations

## 10CFR72 Subpart G

- This subpart describes quality assurance requirements that apply to design, purchase, fabrication, handling, shipping, storing, cleaning, assembly, inspection, testing, operation, maintenance, repair, modification of structures, systems, and components, and decommissioning that are important to safety.
- The licensee and the certificate holder are also simultaneously responsible for these quality assurance requirements through the oversight of contractors and subcontractors.
- Each licensee, applicant for a license, certificate holder, applicant for a CoC shall establish, maintain, and execute a quality assurance program satisfying each of the applicable criteria of this subpart, and satisfying any specific provisions which are applicable to the licensee's, applicant's for a license, certificate holder's, and applicant's for a CoC activities.

# 10CFR50 Appen B Criterion V

Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.



# 10CFR50.59

## (similar to 10CFR72.48)

- A licensee may make changes in the facility as described in the final safety analysis report (as updated), make changes in the procedures as described in the final safety analysis report (as updated), and conduct tests or experiments not described in the final safety analysis report (as updated) without obtaining a license amendment pursuant to Sec. 50.90 only if:
- The licensee shall maintain records of changes in the facility, of changes in procedures, and of tests and experiments made pursuant to paragraph (c) of this section. These records must include a written evaluation which provides the bases for the determination that the change, test, or experiment does not require a license amendment pursuant to paragraph (c)(2) of this section.

# How does Organizational Structure influence the way we think about work?

(b) (4)



# Decommissioning Oversight



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## Project Oversight

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## Integrated Project

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March 2018

## Integrated Project

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# The Seismic Baseplate Event

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# The Seismic Baseplate Event

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# The Seismic Baseplate Event

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# Exercise Report Out

- How many opportunities did Holtec have to identify and correct the issue?
- Was there sufficient direction in procedures to lead them to the correct resolution?
- How many opportunities did SCE have to identify and correct the issue?
- Was there sufficient direction in procedures to lead us to the correct spot?
- Where were the opportunities to get Engineering involvement?





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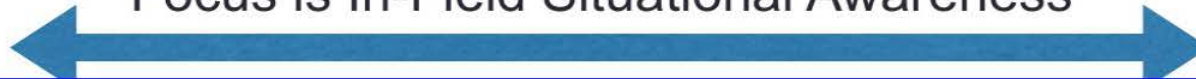
## Defense in Depth to Safe Project Execution

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# Oversight Framework

Focus is In-Field Situational Awareness

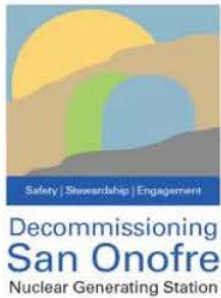


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Focus is Formal Proven Assessments





# Situational Awareness

Drive home behaviors that elevate execution excellence

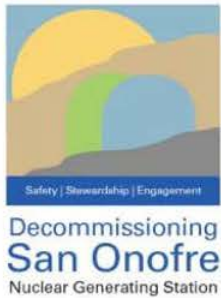
**Observations**

**Records Review**

**Document Review**

**Area Inspections**

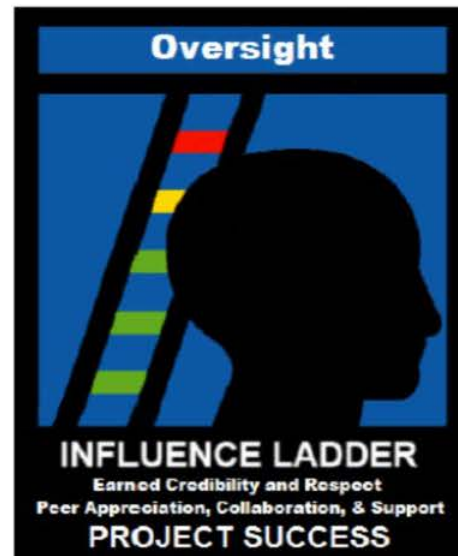
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# Performing A Good Observation

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# Influence Ladder



# Stay in the Green

## WHY IMPORTANT:

To focus attention on how to effectively interact with the Contractor and peers to ensure the following:

• Safety Adherence • Compliance with Requirements • Financial Stewardship

## When:

Apply guidelines whenever interacting with the Contractor or your peers.

## How:

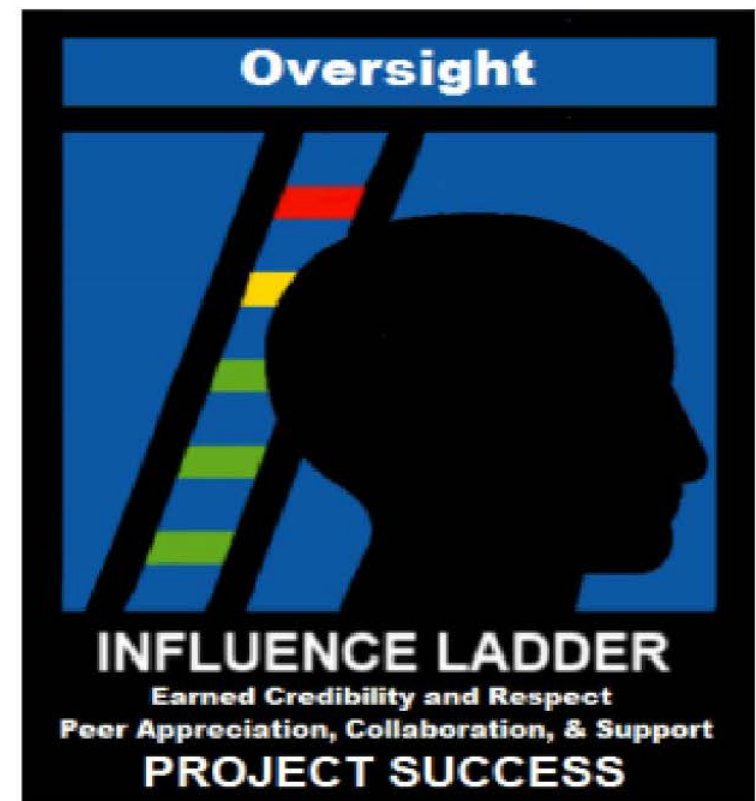
Apply hierarchal order and general rules of influence during interactions:

1. Referent	Power of Soft-Skills (5 E's): Ethical, Engaging, Empowering, Example Setting, <b>Empathy</b>
2. Expert	Subject matter expertise --- thorough understanding of OE, best practice, rules, procedures, and processes
3. Reward	Convey your gratitude for support, and keep energy positive, value the opinion of others, <b>SMILE.</b>
4. Legitimate	Authority derived by your Oversight Role: Legal Precedent (Snyder VS SCE) & Contractual
5. Coercive	Last resort, influence by threatening or evoking negative consequences. Example: Threatening to Stop Work.

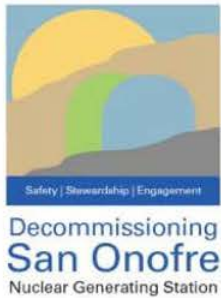
## Coaching Tips:

- Referent power is built up over time by your perceived sincerity when applying the 5 E 's.
- Never stop mastering your area of responsibly or the oversight craft. **KNOWLEDGE IS POWER** and **CREDIBILITY**
- Simple Rewards: Attentive listening, acknowledge a person's concerns, letting a person save "face", or a Smile...
- Avoid the trap of "impatience" causing over reliance on your legitimate authority.
- Practice STAR before using coercive influence to achieve compliance or to change behavior.

# Influence Ladder







# DA Relationship with HOLTEC & SDS

## Earned Credibility and Respect

Isolated Environment

DA Organization

Part of the Contractor Team

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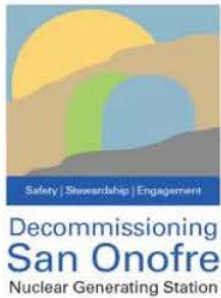
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# Oversight Behaviors In the Field

**Poor examples**

**Good examples**

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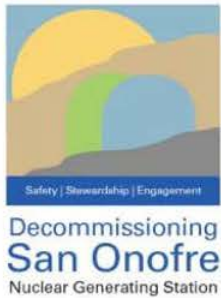


# Oversight Behaviors Internal to DA

## Poor examples

## Good examples

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# Delivering Comments to HOLTEC/SDS

## Poor examples

## Good examples

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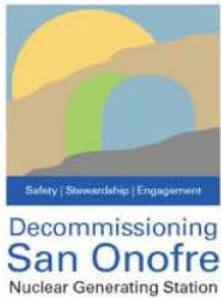
# Document Review Standard

**Over-bearing**

**Standard**

**Leniency**

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# Written Comments - “Our Product”

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# Oversight Behaviors Summary

To be successful:

- Know Your Oversight Role and Authority
- Understand Defense in Depth
- Apply Oversight Priorities
- Proactively Identify Trends
- Know “What wrong looks like”
- Know “What good looks like”
- Exemplify Proper Oversight Behaviors
- Earn Credibility and Respect
- Follow the “Influence Ladder” Guidance



**This is not going to be easy!!!**

# Oversight Behaviors

Based on what we now know, what are we going to do different?



**This is not going to be easy!!!**

# We Are In This Together Your Feedback Is Welcome

## ***OVERSIGHT***

We are in the business to hold the contractor accountable to the terms of the contract, procedure use and adherence, deliverables, performance and expectations, and any other commitments made during submittals or meetings.

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## Questions



# Decommissioning **San Onofre** Nuclear Generating Station

## Decommissioning Agent (DA) Training

### Oversight Readiness for Two Unit Operations

Presented By:

(b)(7)(C)

# Oversight Organization Structure





# Oversight Readiness Resources

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# Oversight Readiness

## Risk Based Oversight Approach

(b) (4)

# Trending Data and Addressing Challenges

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# FTO Challenges / Lessons Learned Log

Line #	Unique ID #	Chronological Canister #	Repeat	Category:	Description:	Date:
(b) (4)						

## Decommissioning

[illegible]

(b) (4)



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# FTO Lessons Learned Work-Association Matrix

Identifier #	Description:	Plant:	Note	Canister Start	MPC Preps Out of FHB	Drain Tube Install	Lifts Into FHB	MPC Preps in FHB	Annulus Seal	RVOA	Lift Into Pool	Fuel Loading	Lift Out of Pool	Lid Installation	Decontamination and Cask Washdown Setup	Blowdown	FHD	Welding	Port Cap Install	Lifts Out of FHB
(b) (4)																				



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# FTO Work-Step Mapping Matrix

INTERNAL WORKING DRAFT - SUBJECT TO SONGS DECOMMISSIONING AGREEMENT SECTION 19.2

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**SCE/HOLTEC INTERFACE  
PROTOCOL**

July 11, 2018

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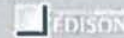
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## PURPOSE

- Improve mutual understanding of process expectations
- Address Contributing Causes associated with seismic restraint and related Extent of Condition reviews
- Improved understanding of relationship between Holtec and SCE processes

2

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## Learning Objectives

- Understanding the purpose of the Interface Protocol (IP)
- Understanding the content of the IP

3

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## Related Corrective Actions

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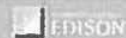
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## OE/LL from Various Reviews

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# Interface Protocol

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# Interface Protocol

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# Interface Protocol

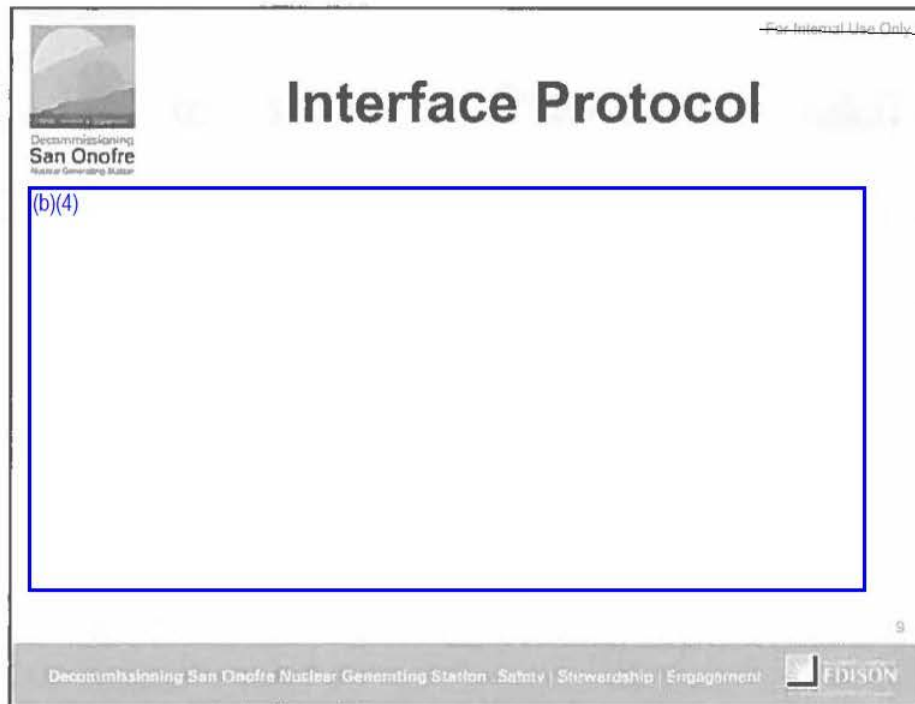
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## Key Procedure

### SO23-I-3.53, Nuclear Fuel Movement – Spent Fuel Pool (Maintenance)

HPP-2464-100, MPC Pre-Operation Inspection  
HPP-2464-200, MPC Loading at SONGS  
HPP-2464-300, MPC Sealing at SONGS  
HPP-2464-400, MPC Transfer at SONGS;  
HPP-2464-500, MPC Unloading at SONGS  
HPP-2464-600, Responding to Abnormal Conditions.



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# Interface Protocol

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## SUMMARY

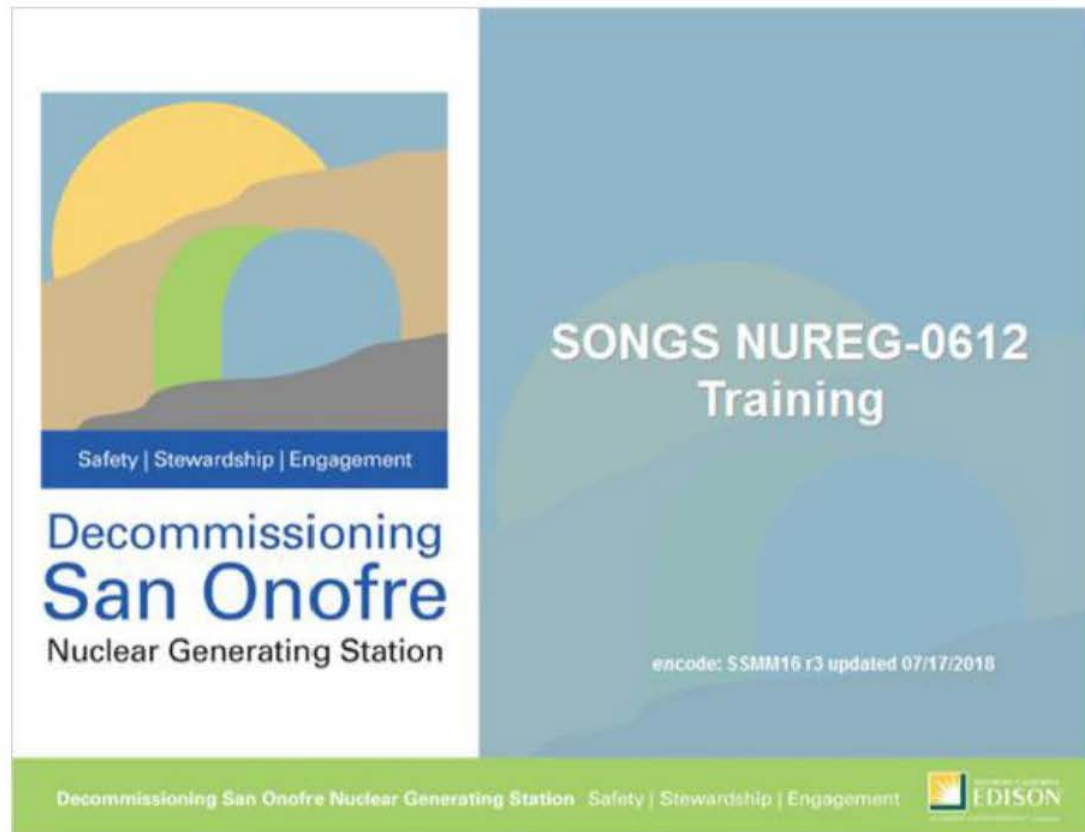
- Processes can be made to work sufficiently well to meet each set of expectations and constraints with clearer communications, reasonable feedback and receptiveness to necessary compromises
- Inflexibility and unwillingness to cooperate will lead to unwarranted conflict

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# NUREG 0612 rev 3 final ShareKnowledge

## 1. Untitled Scene

### 1.1 SONGS NUREG-0612 Training





## 1.2 Home

### SONGS NUREG - 0612 Training


*Safety is, and always will be, our top priority. Performing our jobs safely, correctly, and efficiently is fundamental to our success in decommissioning San Onofre.*

*We have a commitment to our community, our co-workers, our company, and the nuclear industry to always work safely and error free. As we proceed with decommissioning, we must take the appropriate time to safely do our work right the first time and comply with all commitments and requirements.*



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### 1.3 SONGS NUREG-0612 Training



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**SONGS NUREG-0612 Training**


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**Objectives**

Upon completion of this training, students will be able to:

1. Describe the NUREG 0612 Program and its applicability to SONGS.
2. Describe recent industry Operating Experience (OE) related to NUREG 0612.
3. Describe the SONGS site-specific requirements regarding NUREG 0612 as outlined in the SONGS crane procedures.

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## 1.4 SONGS NUREG-0612 Training



SONGS NUREG-0612 Training

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### SONGS NUREG-0612 Training

#### Introduction


In 1980, the Nuclear Regulatory Commission recognized the hazards associated with operating cranes around nuclear fuel, and around the systems and safe load paths required for the safe shutdown of nuclear power plants.

NUREG 0612 was written to address some industry problems. At the time, many utilities that operated nuclear power plants didn't have procedures to run cranes, but instead relied on crane operator training and prior knowledge of the crane operators. The NRC took action to get in front of this issue before an accident were to occur in the industry. Although San Onofre is decommissioning, because there is irradiated fuel on site, we are still committed to NRC requirements. This training is intended to give the trainee information on how SONGS meets the NRC requirements.

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## 1.5 SONGS NUREG-0612 Training




SONGS NUREG-0612 Training

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### Abstract of NUREG 0612:

In nuclear power plants heavy loads may be handled in several plant areas. If these loads were to drop in certain locations in the plant, they may impact spent fuel, fuel in the core, or equipment that may be required to achieve safe shutdown and continue decay heat removal. If sufficient spent fuel or fuel in the core were damaged and if the fuel is highly radioactive due to its irradiation history, the potential releases of radioactive material could result in offsite doses that exceed 10 CFR Part 100 limits. If the load damaged equipment associated with redundant safe shutdown paths, the capability to achieve safe shutdown may be defeated. Additionally, if fuel is of sufficient enrichment, the normal boron concentrations that are maintained may not be sufficient to prevent a load drop from causing the fuel configuration to be crushed and result in criticality.

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## 1.6 SONGS NUREG-0612 Training



SONGS NUREG-0612 Training

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### SONGS NUREG-0612 Training


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#### Operating Experience - ANO


At approximately 7:50 am on Sunday, March 31, 2013, a 600-ton generator stator fell onto the turbine deck and then about 30 feet to the train bay floor as it was being lifted out of the Unit 1 turbine building at the Arkansas Nuclear One plant. One worker was killed and four others injured when the load fell.

The fallen stator, along with associated crane parts, damaged electrical circuits connecting Unit 1 to the offsite electrical grid and damaged fire suppression system piping. Both of the Unit 1 emergency diesel generators started upon the loss of offsite power in order to supply power to essential equipment. The Unit 1 reactor was shut down for a refueling outage at the time.

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## 1.7 SONGS NUREG-0612 Training



SONGS NUREG-0612 Training  
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# SONGS NUREG-0612 Training

### Operating Experience - ANO (continued)

The fallen components also caused the electrical breaker on the power supply to reactor coolant pump B on Unit 2 to open. This reactor coolant pump shut down in turn caused the automatic shut down of the Unit 2 reactor from full power. About 90 minutes later, water from the damaged fire suppression system piping shorted out some of the electrical circuits on Unit 2, causing one of its emergency diesel generators to start and provide power to essential equipment.



Decommissioning San Onofre Nuclear Generating Station | Safety | Stewardship | Engagement



EDISON  
Energy Development & Innovation



## 1.8 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

### Operating Experience - SONGS

(b)(4)

(b)(4)

Decommissioning San Onofre Nuclear Generating Station | Safety | Stewardship | Engagement



## 1.9 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

### Operating Experience - SONGS (continued)

(b)(7)(C)






Decommissioning San Onofre Nuclear Generating Station | Safety | Stewardship | Engagement



## 1.10 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

### Operating Experience - SONGS

(b)(4)

#

Decommissioning San Onofre Nuclear Generating Station | Safety | Stewardship | Engagement



## 1.11 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

### Operating Experience – SONGS (Continued)

(b)(4)

Decommissioning San Onofre Nuclear Generating Station · Safety | Stewardship | Engagement



## 1.12 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

**Operating Experience – SONGS (Continued)**

(b)(4)

(b)(4)

Decommissioning San Onofre Nuclear Generating Station | Safety | Stewardship | Engagement



## 1.13 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

**Operating Experience – SONGS  
(Continued)**

(b)(4)

(b)(4)

Decommissioning San Onofre Nuclear Generating Station | Safety | Stewardship | Engagement





## 1.14 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

### SONGS Procedure Requirements

(b)(4)

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## 1.15 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

## SONGS Implementation of NUREG 0612 Guidelines

(b)(4)

Decommissioning San Onofre Nuclear Generating Station | Safety | Stewardship | Engagement



## 1.16 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

## SONGS Implementation of NUREG 0612 Guidelines

(b)(4)

Decommissioning San Onofre Nuclear Generating Station | Safety | Stewardship | Engagement



## 1.17 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

## SONGS Implementation of NUREG 0612 Guidelines

(b)(4)

Decommissioning San Onofre Nuclear Generating Station | Safety | Stewardship | Engagement



## 1.18 SONGS NUREG-0612 Training



Decommissioning  
San Onofre  
Nuclear Generating Station

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# SONGS NUREG-0612 Training

(b)(4)

Click here to return to the beginning of the course.

Click here to start the exam.

Decommissioning San Onofre Nuclear Generating Station · Safety | Stewardship | Engagement



## MPC Production Traveler

Unit 2 Cask #8

MPC S/N 50

	Activity Description	Start (Date/Time)	Duration (Hrs/Min)	Goal (Hrs)
1	(b)(4)			
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17				

### Variance Explanations and Comments – Reference Activity #

[illegible]



## MPC Production Traveler

Unit 2 Cask #9

MPC S/N 69

	Activity Description	Start (Date/Time)	Duration (Hrs/Min)	Goal (Hrs)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

(b)(4)

# MPC Production Traveler

Unit 2 Cask #10

MPC S/N 046

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
2				
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## Variance Explanations and Comments – Reference Activity #

(b)(4)

(b)(4)

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## MPC Production Traveler

Unit 2 Cask #11

MPC S/N 60

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

(b)(4)



## MPC Production Traveler

Unit 2 Cask #12

MPC S/N 66

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

## MPC Production Traveler

Unit 2 Cask #13

MPC S/N 47

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

## MPC Production Traveler

Unit 2 Cask #14

MPC S/N 73

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

## MPC Production Traveler

Unit 2 Cask #15

MPC S/N 64

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

## MPC Production Traveler

Unit 2 Cask #16

MPC S/N 67

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

# MPC Production Traveler

Unit 3 Cask #4

MPC S/N ??

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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## Variance Explanations and Comments – Reference Activity #

(b)(4)



## MPC Production Traveler

Unit 3 Cask #5

MPC S/N 57

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

(b)(4)

## MPC Production Traveler

Unit 3 Cask #6

MPC S/N 44

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

(b)(4)

## MPC Production Traveler

Unit 3 Cask #7

MPC S/N 53

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

6/23

## MPC Production Traveler

Unit 3 Cask #8

MPC S/N 61

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)



## MPC Production Traveler

Unit 3 Cask #9

MPC S/N 68

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

## MPC Production Traveler

Unit 3 Cask #10

MPC S/N 62

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

## MPC Production Traveler

Unit 3 Cask #11

MPC S/N 71

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

## MPC Production Traveler

Unit 3 Cask #12

MPC S/N 65

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)

## MPC Production Traveler

Unit 3 Cask #13

MPC S/N 055

	Activity Description	Start (Date/Time)	Duration (Hrs./Min)	Goal (Hrs.)
1	(b)(4)			
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### Variance Explanations and Comments – Reference Activity #

(b)(4)